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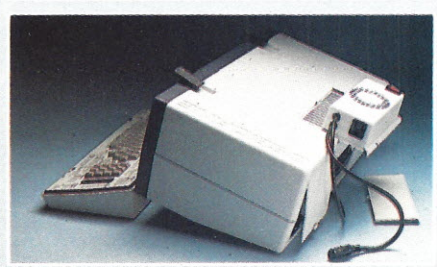

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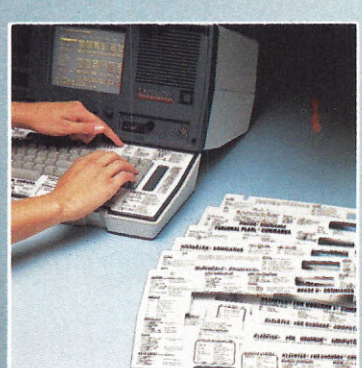

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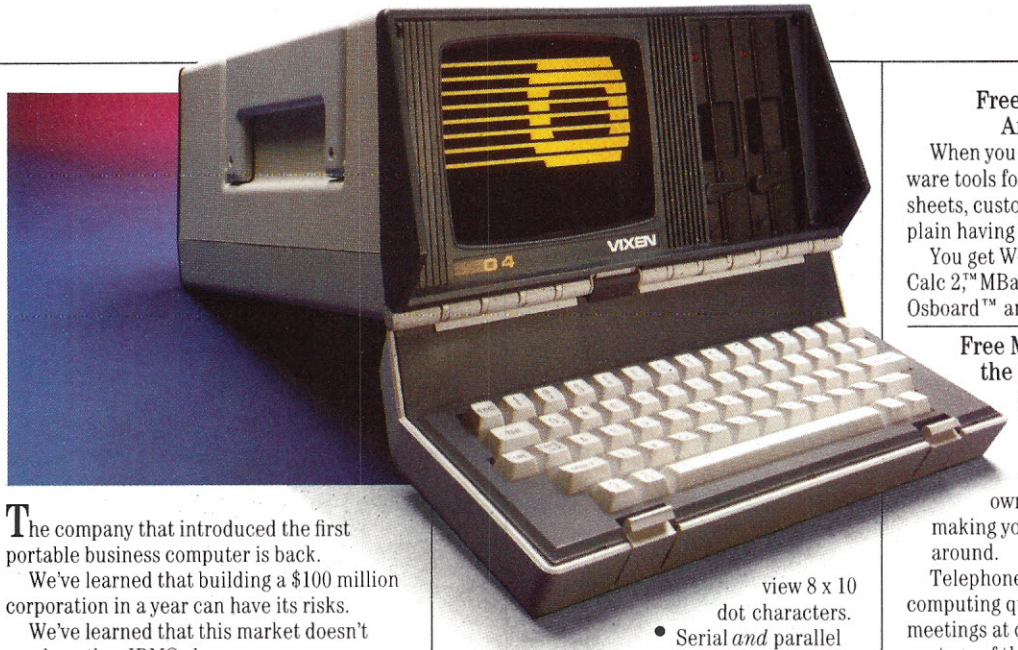

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- CP/M® operating system, for access to the huge library of CP/M productivity software.
- 90-day warranty.

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THE PORTABLE Companion

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Every builder knows the value of a strong foundation.

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Drive C: is a RAM-disk that adds speed and storage capacity to your Osborne. It instantly improves SuperCalc, WordStar, dBASE II and all your CP/M programs.

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Letters

The Wiz

I recently received my copy of the second issue of the new Portable Companion and would like to make a couple of comments. I noted with real dismay the absence of The Wiz column. I always turned to this column first, when reading the magazine. I viewed it as the Osborne company's attempt to provide some degree of customer support for Osborne owners. I urge you to restore it to its former place in the magazine.

I would like to extend that comment to the broader idea that the reason for the existence of the *Portable Companion* is to provide customer support, generally. This means that the emphasis should be on Osborne-supplied software and hardware. For that reason, I am not particularly interested in software reviews that can be obtained in many other computer magazines. I am interested in articles dealing with more effective use of the software and hardware supplied by Osborne and solutions to problems in the equipment as well as third party developments for the Osborne. I note that there was no article on Wordstar in the June/July issue and that the article on SuperCalc described an upgrade that has been available for a year.

As an example of what I believe the *Portable Companion* should do, let me present a problem with the Executive Wordstar. Several of the MailMerge dot commands do not function. For example, `.RM`, which lets you change the right margin when printing out, is not recognized by Wordstar. I would like to know how this can be corrected.

I appreciate the reemergence of the *Portable Companion* and hope that it will follow the path established in earlier issues.

William Rothstein
Baltimore MD

The Wiz column is back. Brad Baldwin has not worked for Osborne Computers since before the bankruptcy, but he has graciously consented to continue the column with the help of the technical support people at Osborne.

The problem you describe with the MailMerge `.RM` *command is a universal problem that has nothing to do with the fact that you are running it on an Executive.* `.RM` *will not work unless you (1) put the* `.PF ON` *command before it in the file and (2) print the file using* `M` *(for MailMerge) rather than* `P` *(for print).*

The emphasis in this magazine always will be Osborne computers. Other magazines barely cover CP/M software if they cover it at all. The supplied software with the Osborne happens to be standard CP/M software that runs also in other machines; however, the emphasis in this magazine is on the Osborne versions.

Word Count

In regard to your request in the April/May issue for ideas on how to count words in Wordstar files, I recently downloaded a program from one of the local RCP/M's that works very well for this application. It is called WC.COM (for Word Count) and was written by David Coons (CIS [72435,136]). It can be called up with the WordStar `R` (Run a Program) option. The ".DOC" and ".ASM" files were also available.

The RCP/M from which the files were downloaded is no longer in operation in El Paso but the above files quite possibly could be found on other RCP/M systems.

Robert M. Neighbors
El Paso TX

Label Madness

My July *Portable Companion* arrived yesterday. With shrewd Charlie Chan logic I discovered that it had come via "Bulk rate — U. S. Postage Paid, Permit No. 241, Concord, CA 94520." To get it to me there were two additional labels plastered on the cover in addition to my mailing address label. One was a sexy little green one with the number "3" on it. I can live with the extra labels (and I previously wrote that they were falling off). What I can't (or would prefer not to) live with is the mutilated cover where the binding straps clinch the bundle. Charlie Chan say, "you number ONE!" I would prefer to be number ten and get my magazine in a more pristine state.

Suggestions: (1) Place a lightweight cardstock cover over the first copy which can carry the extra labels required for permit authorization, etc. (2) Amend my subscription "name" to Robert Farney (from Robert F. Arney). That would be an easy processing entry and put me down the pile. You won't even get a letter from Robert Armoy complaining (the strange name OCC somehow has me listed under on the owner's list.) You might hear from someone else though.

Charlie Chan recommend #1 suggestion.

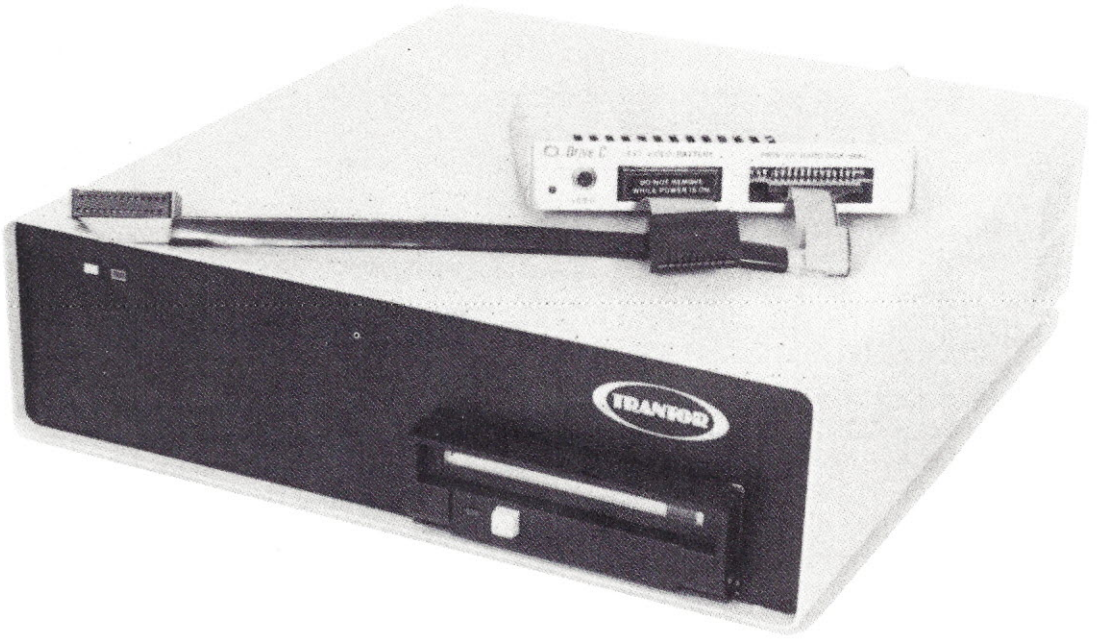
Robert Farney(?) Arney
Blaine, WA

Number One Son suggest we do both, in your case (the cardstock cover may not be enough for this kind of abuse), but the overall solution is to get a Second Class permit. We are working on it.

It was a pleasant surprise when I received the April/May 1984 issue of *The Portable Companion* and found that I

Continued on page 54

BUILD ON OUR HARD DISKS.



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Bargain Basement

So you want Executive help? We added more on the Executive. So you want to get rid of the WordStar delays, and make other patches to version 3.3? We not only have patches, we have conditional expressions! Sorting! Team writing!

The Wizard is back, with Executive bug fixes and patches for WordStar and dBASE II. Tech Tips have returned (send more!), and a new Beginners Tips section starts with this issue (yes, there are some Osborne beginners out there).

In the midst of press preparations the Vixen arrived, and we found time to use a production model and give our opinions in the article on its history and arrival. The indomitable Gale Rhoades, Executive Director of the First Osborne Group, holds nothing back in her review of this remarkable machine.

It is remarkable that this computer is seeing the light of day in October of 1984. It was ready to go in December, 1982, when the forces of darkness prevailed and Osborne began work on an IBM PC-compatible computer. You know how this venture turned out.

There are now 110 computer companies making IBM PC-compatibles. Surely the forces of darkness are now at work on some of them. But not, it seems, at the new Osborne, where the elves and the ruling Gang of Four (Brown, McReynolds, Miller and Schwabe) are busy marketing a new CP/M machine.

Yes, we said new. The computer is new, but it runs "an archaic system" as computer-media journalists describe it. According to many of them, CP/M is supposed to be dead, or at least its market has stopped growing.

Well, we didn't say the Vixen is trendy. But it runs good programs without fail, and you can afford it. There must be room in the marketplace for this product.

We asked Jim Schwabe, VP of Marketing at Osborne, why he thought the Vixen would sell in a marketplace already crowded with computers. Jim thought there would be a resurgence in popularity for CP/M computers in a few months, after IBM shows its hand with new computers sporting a proprietary operating environment.

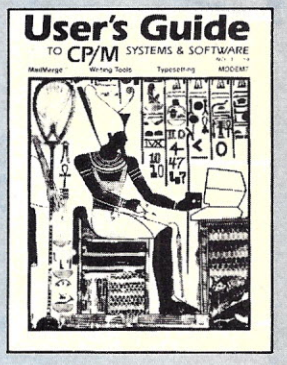
PC-compatible computer manufacturers would be forced to standardize with something else, or risk slipping on IBM's coattails (or face legal action for copying proprietary software). Programmers would try to make their programs available for all popular computers, including CP/M computers.

But whether or not CP/M generates fresh copy in other computer magazines, there are perhaps over one million CP/M computer users, and the numbers continue to grow at the same rate. Osborne, Kaypro, Morrow, CompuPro and Zenith computers are still selling well. More than 180,000 Osborne computers are in use. Those publishers and manufacturers who think that the users of these computers are not interested in new software and hardware are missing a lucrative market.

tb & cr

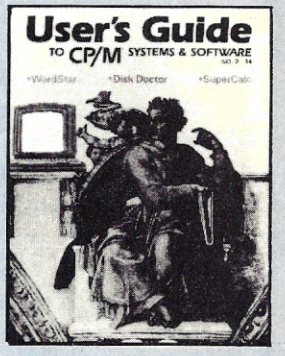
With Magazines Folding Left and Right, Which Independent* One Still Covers CP/M Computers and Software?

User's Guide® contains tutorials to help you use your Osborne computer or other CP/M® system. For the low cost of a magazine subscription ($18), you get six issues stocked with tutorials and software evaluations. No fluff, just direct, readable "how to use" information for users of CP/M computers.



If you have a CP/M computer, you need to know where to find good software and accessories. ***User's Guide*** has in-depth evaluations of commercial ***and free public domain*** software, so that you can choose the best buy.

If you are learning to use a CP/M computer, try the ***User's Guide*** tutorials rather than spending much more on training packages. ***User's Guide*** teaches you how to use the most popular programs on the market, like WordStar®, SuperCalc®, dBASE II® and Modem7. Some of these programs also run on MS-DOS® computers.



Editors Tony Bove and Cheryl Rhodes are the acclaimed writers of several computer books on CP/M and WordStar. Contributing editors and columnists include other notable writers who use computers extensively, such as Arthur Naiman, Steve Rosenthal, Jonathan Sachs and Kelly Smith. The writing is crisp, intelligent and informative, without an overuse of jargon.

User's Guide also keeps up with the changing personal computer market, with informative articles about communicating with other systems (like MS-DOS) and transferring programs and data.

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Review

The Osborne Vixen

Osborne's newest computer is compact and fast, and the entire $1298 package is excellent.

Gale Rhoades

For the last six months, I have been working with various revisions of a "beta test model" of the computer called the Osborne Vixen (also called the Osborne 4). From the very first, I was impatient to see the release of this unit so that I would no longer have to hide at home when I wanted to use a truly fine computer.

More than three years ago I bought my first Osborne. At that time (as I have had many occasions to repeat) I knew absolutely nothing about computers. In fact, I bought the first one because I wanted something new to fill my time. The Osborne most nearly matched the IBM Selectric keyboard on which I had learned to type. Obviously (to me at least) the keyboard and packaged software would provide me with the key to all the learning I ever wanted to do with computers.

Looking back, I realize how naive I was. RAM was something more than the male sheep I had known as a child and WordStar on the Osborne with a printer turned the computer into the freedom to write in a way I had never dreamed of! Infected with a desire to learn, I dropped all other projects and got involved with FOG (a group of computer users trying to help each other learn more about computing). As frequently happens when any one subject encompasses most of a person's waking hours, my knowledge has grown in all directions.

I can sit down to a new machine and be working away in minutes, frequently without benefit of manuals. I can program when my interest takes me in a direction not covered by existing software. Most important, I can help newcomers to this fascinating world skip many of the errors and frustrations I faced three years ago.

These last three years have seen many changes in the world of computers. With the introduction of personal computers from the "big boys" like IBM, the "experts" forecast the end of the CP/M operating system and the computers which employed it. Most of the press and nearly all of the retailers rushed to join the bandwagon of MS-DOS and PC-DOS as the operating systems for the "knowledgeable". After all, the trendy IBM PC offers a wide variety of application programs, 16-bit speed of operation, and the latest versions of the popular CP/M programs.

WordStar, SuperCalc, and dBASE worked together to produce promotion-quality reports, then Lotus 1-2-3 must be able to do it better. Never mind that you loose flexibility in the process.

But, you ask, what has all of this to do with the newest Osborne? Having used several of the popular computers (including several of the PC clones now on the market) I was not sure that Osborne could compete in this fast-changing industry. I am pleased to say that I had no cause for concern.

The Vixen is, for the main part, the perfect computer for any application. From the moment I turn on the computer each day, I am constantly amazed at its response and speed of operation. For the hackers, this is a result of the interrupt-driven system. For the user, it is all built-in so that you do not have to make complicated changes.

the moment I need them. No longer do I have to exit either the file or even WordStar to define a special function key for a typesetting code needed only for one article of the *FOGHORN*. From WordStar to SuperCalc only three key strokes are needed to change the definition of the arrow keys.

Some users will find the use of an external monitor less convenient because the keyboard does not detach from the rest of the Vixen. However, most users will not mind because the Vixen has a built-in seven-inch amber monitor. I prefer the amber monitor to either the green or the black and white and am finally a convert to the 80-column screen. (Though I sure wish I had a 240 column by 90 line screen for SuperCalc — then I could see on screen what my printer can produce!)

The Vixen supports windowing in the same manner that the Executive does. This will allow the 25th line to be used as

The Vixen is a fabulous package small enough to take anywhere. Its speed, software, and screen are infinitely preferable to "lap" computers.

But fads are usually the poorest basis for judging how to spend your money. A computer is not a decoration for your desk nor a fancy doorstop. It is a powerful tool which the user must be able to utilize or the money spent could just as well have been tossed in the fireplace. Certainly it is true that, for the skilled, a computer can shorten the time spent on repetitive jobs. Where it used to take hours and much retyping to produce a single letter to our satisfaction, we can now use WordStar to personalize a hundred letters in the same amount of time. Where it used to take several days to work out the comparative cost of two different homes, we can now use SuperCalc to change two or three variables and immediately read the bottom line.

The problem is that many users believe that if an 8-bit computer will do the job well, then a 16-bit computer will do it even better. If dBASE II manipulates your data base and extracts the data you need, then dBASE III must do it better. If

Keyboard and Monitor

The keyboard is virtually identical to that of an IBM Selectric with an easy touch. Eight keys have been added: DEL (^G in WordStar), FUNC (more on this later), four arrow keys, the CTRL (Control) key, and the ESC (Escape) key. Unlike the Osborne 1 and Executive, the Vixen does not have a built-in numeric keypad for number crunching. Rather, the operating system has been designed to allow an external keypad to be plugged into the RS-232 serial port (just modify the operating system with SETUP.COM and you are ready to attach the keypad).

It took a bit of practice to get used to the Vixen keyboard after a long day on another computer. However, the compensations made the little extra effort extremely worthwhile. The FUNC key allows me to change the special function keys and/or the arrow keys instantly. This has been a handy feature as I now have the special function keys I need at

a status line for RCP/M systems. The character set is vastly superior to that of the Executive and extremely easy to read.

Drives and Ports

The Vixen has two half-height double-sided double-density drives so each disk will hold about 100 WordStar pages of text. Owners of single-density Osborne 1 computers will find the 390K of disk space on each drive an unbelievable convenience. Where the Osborne 1 came with four or five disks and the Executive came with fifteen, the Vixen will have two. And this increased capacity comes with a much faster running time.

It has one serial port and one parallel port (for centronics printers). While there is space for an additional port, no provision has yet been made to add another port. I would have preferred two serial ports — one configured for a

modem and one for a serial printer such as was done on the Executive.

Only Drawbacks

The lack of this extra port, the absence of a disk storage pocket, and the reset button hidden on the back of the Vixen are, in my opinion, the only drawbacks in the design of the unit.

With practice, I now able to find the reset button without turning the machine around. In place of the disk pockets, I just keep a disk in each drive rather than using the cardboard pieces I got with the unit. But so far, I have not found a satisfactory fix for a "missing" serial port. With the release of the Vixen, I am hoping that one of the companies catering to the Osborne market will fill this need.

The Osborne Vixen (right) and the Osborne Executive.

Bundled Software

The standard software with the Vixen is WordStar and MailMerge 3.3, SuperCalc2, MBASIC, Media Master, Osboard, TurnKey, Desolation, and the CP/M 2.2 operating system and accompanying Digital Research utilities. Standard system programs like AUTOST, SETUP, COPY, and SYSGEN are also included. New system programs are STACK and PROMPT.

Together with TurnKey and SUBMIT, STACK.COM and PROMPT.COM are the secret to an automated, menu-driven system which was designed with two goals: ease of use for the novice and speed for the experienced hacker. I have always avoided menu driven systems. With few exceptions, I could always execute a program manually faster than a menu program could. The "shell" type menu programs have always been too difficult for a novice to modify and usually more trouble than their limited time-saving justified.

Osborne finally presents an alternative in TurnKey. As shipped with the Vixen, the disks have several ".SUB" files. From a cold boot (turning the power on or pushing the reset button), TurnKey is automatically executed. What next appears on the screen is a list of the ".SUB" files (in the order they were found on the disk directory). You may either select one of these options, including exiting to CP/M, or select the second menu which lists all of the ".COM" files in the order they appear on the disk directory.

If you select one of the ".SUB" menu options, the program you have chosen is automatically loaded. For example, my RUNWS.SUB (listed on the menu as `RUN THE WORD PROCESSOR` first executes SETUP.COM to change the arrow key configuration and then loads WordStar. Immediately, I am logged to drive B:. It takes only seconds and all I typed was a 1. When I exit WordStar, SETUP is again executed so that the arrow keys return to the CP/M configuration and TurnKey is again loaded.

If you go to the `COM FILE MENU` and select one of the listed options, you are given an opportunity to specify any parameters. For example, if you want to know the size of all ".DOC" files, select XDIR and enter `*.DOC` and a Return (↵). If you decide to erase a ".COM" file and return to the `COM FILE MENU`, you will find the options reorganized. The options are also altered after you add a ".COM" file.

For the Osborne owners who spent many hours altering their AUTOST.COM or EXECST.COM, the version on the Vixen has a built in modifier. All that you have to do is add an argument. For example: `AUTOST WS`↵ creates an AUTOST.COM which will automatically load WordStar from a cold boot.

The software shipped with the Vixen is more than many users will ever need. WordStar with MailMerge provide excellent word processing functions. SuperCalc2 is the most powerful spreadsheet program available, with the eXecute command allowing the creation of automated applications. MBASIC is the most widely used programming language, especially for beginners and game players.

Osboard from DG/Systems gives the user the ability to create business graphics, and MediaMaster lets you read and write disks from most other computers. Desolation is the only game I have ever spent more that a few seconds playing. For the devoted, you can use a game paddle through the parallel port though I haven't done so (the attraction for me is the graphics).

Compatibility

I have tried all of my Osborne 1 software on the Vixen and only a few programs (ones which use Osborne 1 hardware or specific addresses or have

I have always avoided menu driven systems. With few exceptions, I could always execute a program manually faster than a menu program could. Osborne presents an alternative in TurnKey.

more than 80 characters per line) will not run on the Vixen. Many of the programs run so much faster on the Vixen that the job is done before I can even start something else on another computer.

Support

Osborne Computer Corporation is addressing the well known problem of support for the user by paying one year's dues in FOG for each buyer of the Vixen. The network of local groups affiliated with FOG should ensure that any user can find assistance in their immediate area. For others, FOG is expanding its technical support staff.

Details

The Vixen (Osborne 4) is a Z80A-based computer that runs CP/M. It has 64K of RAM, 4K of initialization ROM, a 256-character set ROM, one serial port, one parallel port, a Selectric-style keyboard (without numeric keypad), a seven-inch amber CRT display, and two double-sided double-density $5^1/_4$ inch disk drives in one transportable package (approximately 12" by 16" by 6", and weighing about 17 pounds).

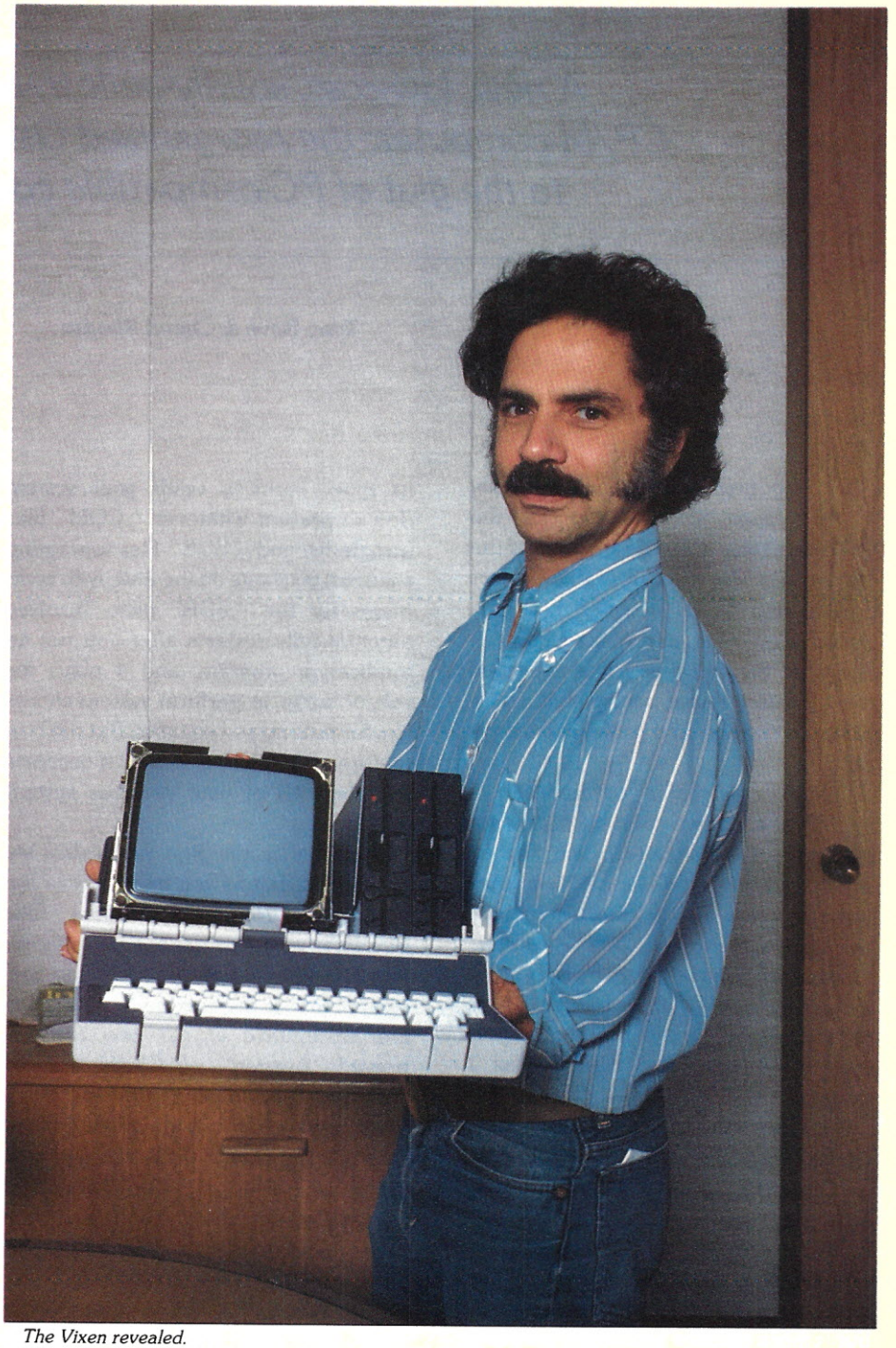
Software bundled with the computer includes WordStar and MailMerge 3.3, SuperCalc2, MBASIC, Media Master, Osboard, TurnKey, Desolation, and the CP/M 2.2 operating system and accompanying Digital Research utilities. Standard system programs like AUTOST, SETUP, COPY, and SYSGEN are also included. New system programs are STACK and PROMPT.

Suggested retail price for the entire package is **$1298**.

A ten-megabyte hard disk (Xebec 9710H) is also available from Osborne (price not available at press time).

Summary

The Vixen is a fabulous package. At about 12" by 16" by 6", and weighing about 17 pounds, it is small enough to take anywhere. Its speed, software, and screen are infinitely preferable to "lap" computers recently released. Priced at $1298, it is the perfect package for first time buyers, writers, students, business professionals, and programmers. In fact, I can't imagine anyone for whom it is not the perfect computer.



The Vixen revealed.

Feature

The Vixen Arrives

A new, low-cost, solidly-built transportable CP/M computer: the reorganized Osborne's answer to the glut of PC-compatible computers.

Tony Bove & Cheryl Rhodes

Our first reaction was that the Vixen (known also as the Osborne 4) was a dwarfed version of the Osborne 1. The notorious OCC project code-named Vixen in 1982 had produced a machine that looked and felt like what the Osborne 1 was supposed to be: an easy-to-use, solidly built, transportable business and professional computer.

There are major differences, of course: the amber seven-inch monitor (similar to the Executive), two double-sided drives with 390K capacity in each drive, a silent fan, a sturdy keyboard (without numeric keypad), a smaller "footprint" (area taken up by the unit on a desktop) and a lighter weight. These differences are, for the most part, significant improvements to the Osborne 1 design.

However the most significant improvements are not immediately obvious because they are in the operating software. As you power up the computer, it automatically boots the system disk and starts a program called TurnKey, which resembles a CP/M start-up menu but is more efficient than other menus of its type. TurnKey reads your system disk to present whatever ".COM" files (programs) and ".SUB" files (operating routines) you have on the disk, with comments for the ".SUB" files. TurnKey automatically restarts after you run an application program, and it plays the role of butler to perform system chores like formatting and copying. But the best feature of TurnKey is its size: it occupies less than 4K of your precious system disk space.

TurnKey is the first noticeable improvement, but as you begin to use the Vixen in typical applications (like WordStar word processing), you also notice the power and speed of the machine. Most of the speed improvements are attributable to the new and improved "version" of CP/M 2.2 by Osborne. Functional improvements include function keys that can be defined at any time, even while running programs, and a "type-ahead" buffer that lets you type new commands and data while the computer is finishing its previous task.

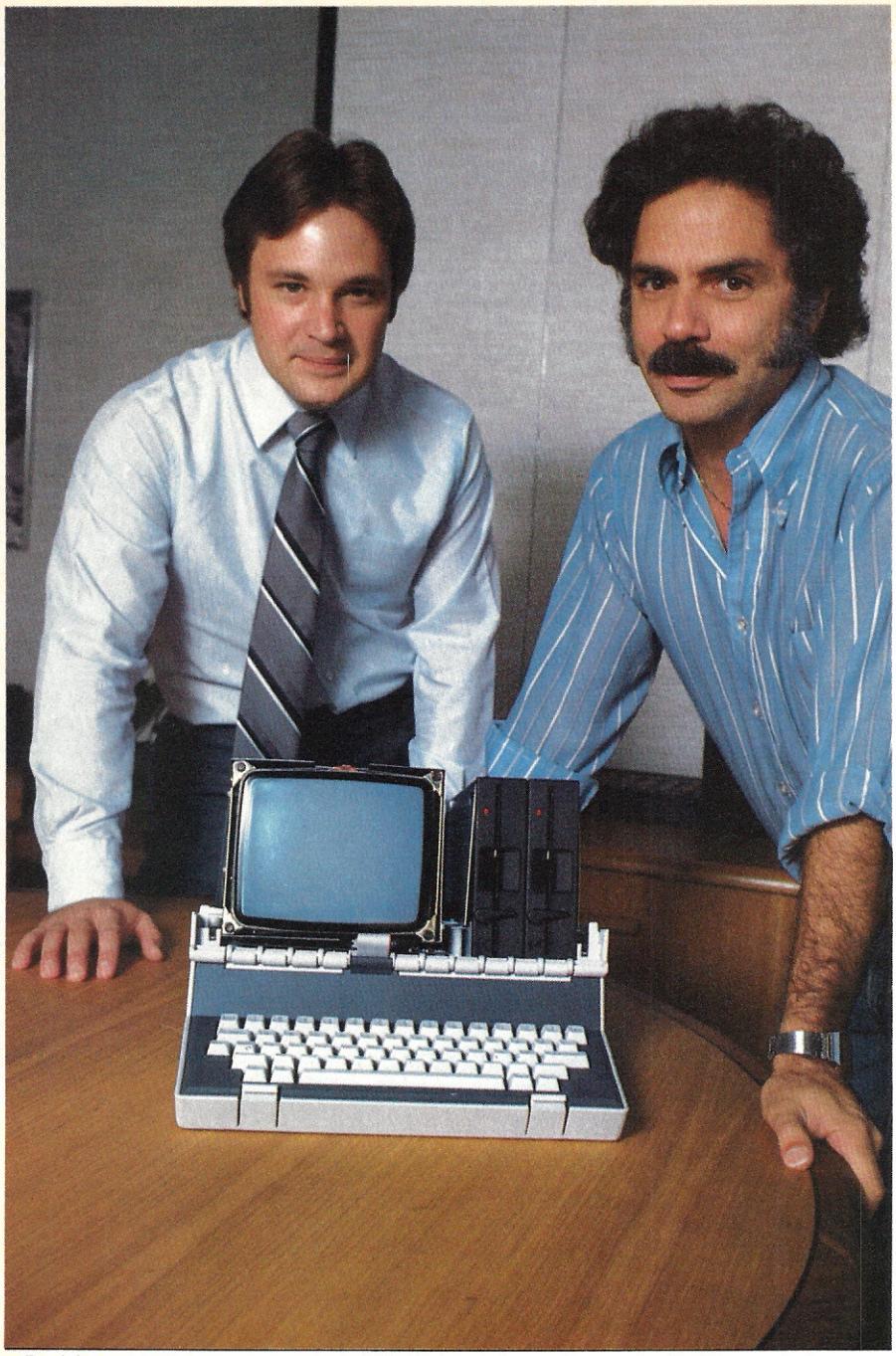
The machine is fast, perhaps faster than the IBM PC when running WordStar (unfortunately we have no benchmarks at this time, just a user's sense of feel). WordStar 3.3 is supplied with the computer, as are eight other software packages, bundled into the $1298 price tag.

What you're getting for $1298 is without a doubt the fastest floppy disk version of plain CP/M 2.2, and one with better function keys and performance than the Osborne 1. The machine was designed to run all of the Osborne 1 and regular CP/M software, and has a standard 80-column by 24-line screen.

An optional ten-megabyte hard disk (the Xebec Xero D 9710H, marketed by Osborne, price unannounced at this time) is plug-compatible with the Vixen, takes up very little tabletop space, and is also transportable (with its own cushioned travel case).

We are impressed enough to want to own one. We already have an Osborne 1 and other CP/M systems, but this transportable computer seemed to be perfect for our needs, more so than the Osborne 1, which is not so transportable with its desk-full of accessories. It makes the perfect "second computer" for an

The Osborne Vixen computer with the HD-10 hard disk subsystem.



Fred Coury (right), project manager, and Dan Brown, software designer for the Vixen project.

Osborne 1 owner; using Media Master (bundled with the Vixen) you can also read, write and format all the popular $5^1/_4$ inch disks.

An excellent review of the Vixen appears in this issue. In this article we explore the history of the project and interview the design and implementation team.

The Idea

In November of 1981, Adam Osborne's new computer company was growing fast, selling one product: the Osborne 1 computer. It was the first transportable personal computer, and it was fast becoming the most popular CP/M computer. With over two thousand commercial application programs available for CP/M computers, the Osborne 1 was finding its way into small businesses, Fortune 1000 companies, doctors' and lawyers' offices and in the homes of knowledge workers, writers and hobbyists.

On November 30th, 1981, Adam asked an outside consultant named Fred Coury to start designing a new computer. Fred is well known in the field of microprocessor research and development; he soon became the assistant architect, logic designer and project manager of the Vixen project.

The Vixen is probably the first personal computer whose logic circuits were working bug-free for two years prior to its announcement.

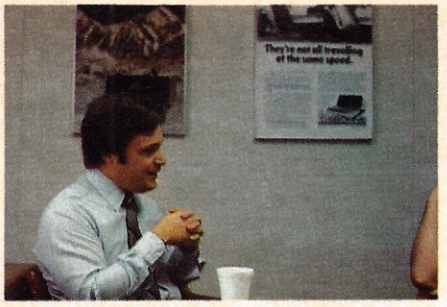
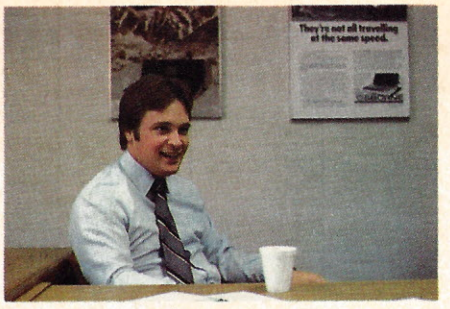
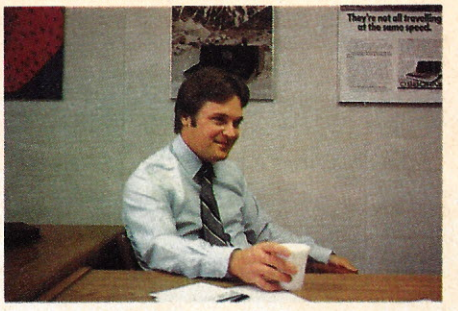
Adam wanted to do a low-cost CP/M computer that was lighter and more compact than the Osborne 1, with a target price of $995. It had to be compatible with the Osborne 1 in order to run all of the Osborne 1 software. At that time CP/M computers were the rage, the IBM PC was not yet available, and rumors were flying that the IBM PC would run the "industry standard operating system" known as CP/M 2.2

By January 1982 (two months later) Fred had the basic architecture for the new computer, and a schedule. By December of 1982 they were cracking open the champagne to celebrate the Vixen (a prototype in soft plastic was displaying Christmas trees).

We asked Fred to comment on how closely today's Vixen resembles the early Vixen prototypes: "The major hardware difference is that the early Vixen had a five-inch CRT, and the new Vixen has a seven-inch CRT. Also, the early one had single-sided drives, and the new one has double-sided. The logic circuits are identical. Essentially the circuit design has not changed since November of 1982."

The design uses the four megahertz Z80A processor with the standard 64K of internal RAM (random-access memory). The upper 4K of RAM is the display buffer, and "shadowed behind" this 4K of RAM is the initialization ROM.

Fred Coury wanted to make the machine compact, rugged and reliable, and he decreed its size at the very beginning of the project (roughly the same size it is today). Reliability meant not having to worry about the hardware. The logic de-

Dan Brown describes the sequence of modifications that vastly improved the performance of CP/M 2.2 on the Vixen.

sign was in place in November of 1983, and it hasn't changed since. "Not one bug was found in that design, and all our prototypes worked without one failure." The Vixen is probably the first personal computer whose logic circuits were working bug-free for two years prior to its announcement.

Vixen Becomes Cinderella

The Vixen was such a wonderful idea that rumors had begun to leak to the press (we knew of the Vixen project at that time, but had not seen specifications or a working model).

Why wasn't the product released in January of 1983? We asked Jim Schwabe, formerly a marketing executive in the international division of Osborne, and now a Marketing VP for the newly-reorganized Osborne:

"At the end of 1982 the company was madly selling 10,000 Osborne 1 computers a month, getting ready for the Executive to be introduced in February of 1983, and the Vixen to be introduced in March, when suddenly in December the company realized that there was a lot left to do on the Executive, and the choice was made by management that all work would stop on the Vixen and all effort would be put on the Executive.

"Then there was a very industrious person, Al Stone, a special assistant to Adam Osborne, who wanted to put a seven-inch screen in the Vixen. Much of the company was against it because the computer was already designed, and they didn't think it could be done. Al Stone got a system, and put a seven-inch screen in it, and proved that it could be done.

"Top management made the decision that the only possible future for the company was going to be in IBM PC compatibility, so the Vixen project was officially killed."

"That caused a major re-design for the project, which postponed the Vixen introduction for several months while the company re-tooled and changed designs to manufacture it."

Fred Coury had split for Mexico after "finishing" the project in December, 1982. "Somehow they tracked me down (in Mexico) to tell me that everyone had been pulled off the Vixen project and put on the Executive project. When I came back, Adam hired me to start the Vixen project up again with no Osborne personnel — just put the parts back together and get it ready for production."

Fred Coury, with co-workers John Binns and Charlene Ament, put together twenty-five prototypes. They all worked without any serious problems and they were connected to a Corvus network for developing the software.

Dan Brown had been working exclusively on the software for the Vixen: "When the project was killed, I was told to work on the Executive. I had enough clout at that time to say no, that I wanted to work only on the Vixen, and my manager let me work on it unofficially. I knew the product would be good."

Dan continued to refine the operating system, and brought his prototype home to work on it. The team at that time included Dan Brown on software, Mike Wise on mechanical design, Phil Bourgeois on industrial design, Charlene Ament on printed circuit board, John Binns on "a little bit of everything," and Tom Parker, the FCC specialist.

Jim Schwabe explains what then happened: "By June of 1983 the Executive had been introduced, and the Executive 2, also called the Osborne PC, was supposed to be made ready. Top management made the decision that the only possible future for the company was going to be in IBM PC compatibility, so the Vixen project was officially killed."

The Vixen sat around and gathered dust at Osborne for six months, but Dan Brown and Fred Coury continued to work on it on their own time.

Dan had continued to work on the software with no deadlines or pressure to finish it. At home with his prototype, Dan had the opportunity to design and implement the perfect CP/M system — to throw out all the old code and design new code that would be faster and more efficient. "Some day they're going to ship this thing," Dan thought at that time, "and when they do, it's going to be done right." So Dan stayed on the project, testing hard disks with the system, and testing software.

In October of that year, less than four months after that fateful decision, Osborne Computer Corp. went belly-up and into Chapter 11. A few months later the "gang of four" from the international marketing division of OCC (Ron Brown, Jim Schwabe, Dave Miller, and Chodi McReynolds) presented a reorganization plan and eventually took over the reorganized Osborne, with Ron

Jim Schwabe, VP Marketing.

Brown as president. The Vixen computer was part of the reorganization plan.

"We revived the Vixen," says Jim Schwabe, "because we always thought the Vixen was a worthy product. We went to Fred and he said it was ready, and we asked Dan how much of a software effort was needed, since only 75% of the software had been ready when it was killed, and he said it was ready now!"

Fred Coury had learned of the fateful decision to abandon the Vixen project when he came back from an Asilomar microprocessor conference and was suddenly *persona non grata* at Osborne, not allowed near the project. "After the fall and Chapter 11, in March of 1984 I came back to this huge cavernous building that was almost completely empty. I had to find all the missing parts and prototypes, and determine the status of the project. We searched through the 120,000 square foot building of former offices, labs and manufacturing areas, through hundreds of filing cabinets and stacks of program listings."

The team put together the new Vixen and Dan Brown showed off his new version of CP/M.

Marketing Strategy: The Slipper Fits

It seems odd that in the second year of the reign of the IBM PC-compatible computer, a computer manufacturer would announce with considerable fanfare a computer that is not IBM PC-compatible, not Apple-compatible, and not AT&T-compatible, but compatible with the previous generation of CP/M computers.

Yet the newly-reorganized Osborne Computer is betting on the Vixen to pull the troubled company out of the spectre of bankruptcy. As users of CP/M computers (with considerable experience and knowledge of CP/M software) we see the obvious benefits of using the Vixen in our applications; but what about the Vixen's chances in the open market?

We asked Jim Schwabe why Osborne chose the strategy of introducing an eight-bit CP/M computer:

"If you look at the market now, there are too many PC-compatible computers. There are 110 companies making them. This market exists only at the liberty and whim of IBM.

"Also there has been a lot of hype about sixteen-bit systems and performance. But there are many other areas to do things. Some market researchers (Dataquest and Infocorp, to name a few) are predicting a resurgence in CP/M systems. Besides, the Vixen performs as well or better than many sixteen-bit systems.

"We have taken the standard CP/M 2.2 system and improved it to the point where it has almost none of the objectionable limitations of CP/M. For example, it supports type-ahead and other things.

"There's no question that there is more business and professional software for CP/M systems than for any other system. There is more software for Ap-

ple computers if you count games, but there are much more serious programming tools and business and professional programs for CP/M computers. The IBM PC has a lot of software, but not as much as what is available for CP/M at this time.

What you're getting for $1298 is without a doubt the fastest floppy disk version of plain CP/M 2.2, and one with better function keys and performance than the Osborne 1.

Jim pointed to the fact that IBM is entering the applications software market with products that hint at the development of a future proprietary operating system and window environment. "What's that going to mean? There are thousands of software writers out there — what are they going to write for? It's easier to write programs for a CP/M computer than guess what IBM will do next.

"The marketing strategy is to sell a complete solution. The Vixen is going to be the workhorse computer in the marketplace — low cost, completely bundled with all the hardware and software you need, as in the Osborne tradition. Try getting anyone to sell you an IBM PC with nine software packages free!"

Operating Software: Learning To Dance

The original Vixen software was developed on Vixen computers connected to a Corvus network. The original intent was to supply the same functionality of an Osborne 1 with better performance. By December of 1982 Osborne had a complete CP/M 2.2 system ready to go (single-sided drives).

Then the project was put on indefinite hold. Dan Brown saw it has an opportunity to take another look at the system, and decide how to do it better. He threw away the examples of how to do the BIOS module (the customized module that adapts CP/M to a particular computer and disk drive configuration), and threw away the source code used for the BIOS in the Osborne 1, and started fresh. "I wanted to design new software from the requirements, with what I knew as the *intent* of the old software. Also I incorporated some of the new things from the Executive project."

One aspect of the Executive project was the design for a terminal emulator. They developed a clever scheme of console output, and they used a set of tables to control ESCape sequences.

Controlling disk access is the most important function in a disk operating system such as CP/M. To make a system perform faster with a floppy disk, a designer must implement a way to access chunks ("blocks") of disk data. "Blocking/deblocking is one of the hardest things to implement in a BIOS. Rather than trying to figure it out, many system implementers simply use the examples in the Digital Research documentation. We didn't do that — we designed it from scratch."

The Vixen BIOS was designed to be flexible — it can read six different disk formats "on the fly." You can swap Osborne single-density, double-density, single-sided and double-sided disks in these drives. After studying sector interlaces (we timed the disk access overhead), we achieved a better sector interlace on the double-sided double-density format. The format holds more data than most other formats, and the drives access the disk faster. With Media Master you can also read and write many popular $5^1/_4$ inch disk formats used in other computers.

The modifications were put in to make the computer perform faster than any other computer running CP/M 2.2, and this version of CP/M 2.2 is at least twice as fast as any other version of CP/M 2.2.

What makes a CP/M 2.2 system slow? Most programmers agree that the bottleneck is the BDOS module. However, Dan found that there are special sections of the BIOS that the BDOS uses nearly all of the time. If those sections are slow, they cause the entire system to be slow, no matter how fast anything else is.

Dan Brown changed the BIOS to run with the generic CP/M 2.2 BDOS — it was made smaller and faster. Some of the important routines to change involved the console. The perceived speed of a computer is closely linked to the speed at which the computer outputs characters to the screen. Dan tuned the console routines to output characters as fast as possible. In the process everything in the system speeded up, yet the functionality remained constant as any CP/M 2.2 system.

Another important change involved the BDOS checking for a pressed key (console status). Even when you're not using the console to output characters, the BDOS is checking the console constantly, to see if a key has been pressed. Dan changed the routine to run much faster. Keyboard scanning is all done in software.

There were numerous ideas about adding a numeric keypad. There are commercial keypads available, but they use the RS-232 serial interface. Why not plug one of these into the serial port of the Vixen? The operating system wouldn't work this way, so Dan added a special BIOS routine so that you can assign a special BAT: device driver to the CON: device in a STAT command. This BAT: driver makes the serial input look just like it came from the keyboard, and *at the same time* you can type on the keyboard. So the keyboard is fully active, and any characters received through the serial port look as if they came from the keyboard.

This design makes it possible to plug anything into the serial port, not just a numeric keypad. You can plug a bar code reader, mouse, special typing device, court stenographic recorder, or any input device, to the serial port and at the same time have the keyboard active as well. Devices can input characters at speeds up to 19,200 baud.

The AUTOST (auto-start) program was also improved. The older version did not work properly. After auto-starting a program by booting a disk, you could not run the AUTOST program again from the command line and get proper results. Also it was difficult to change the name of the program it

would automatically execute.

Dan Brown designed a new auto-start program where you can change the name of the program by typing it on a command line with the AUTOST command; e.g., **AUTOST NEW**↵ will change the automatically executed program from whatever it was to NEW.COM.

The Vixen was designed to be as foolproof as possible under the CP/M guidelines. For example, Osborne put in complete power-on diagnostics (which you hardly notice when you turn it on) that do a full-blown test of everything in the system in less than one second.

The system automatically boots from disk without requiring you to press Return. This coupled with the auto-start program works well to provide a "turnkey" system that is easy to use. Osborne went one step further with the Turnkey program.

The Turnkey program only occupies 4K of disk space, and it dynamically adjusts its menus to your application. With most menu or turn-key programs, if you erase the disk file containing one of the application programs listed in the menu, you have to change or re-install the menu program to reflect the fact that the application program is gone.

Turnkey automatically changes its menus by reading the disk directory and the files. Turnkey builds a menu of submit files and a menu of ".COM" files (executable programs) along with the built-in commands. If you add, for example, the public domain ZCPR system, Turnkey will dynamically change to add the extra built-in commands available with ZCPR.

Turnkey uses the conventional $$$.SUB function of CP/M so that it can execute any CP/M program without changing the CP/M system in memory. Turnkey also lets you execute a program with or without parameters.

When the executing program or built-in command finishes, the Turnkey program automatically starts up again. With submit files, the user puts the command **TURNKEY** at the end and it restarts the Turnkey program. With submit files, it takes the first 63 characters of the submit file to use as a menu description, so that you can put a comment in the first line of your submit file, and have that comment appear in the Turnkey menu.

The end result is a dream CP/M system — one that has most of the things you'd want but couldn't get in CP/M version 2.2 or in CP/M Plus.

But that wasn't enough for Dan Brown. After Osborne went into Chapter 11, Dan worked for a company that manufactures an IBM PC-compatible computer, and Dan borrowed some of the concepts built into PC-DOS. For example, on the IBM PC there is a command called STACK that types characters on the keyboard for you. STACK puts a string of characters into a buffer so that they can appear to a program as if typed on the keyboard.

"The problem called for a mechanism for sending characters to a program no matter how the program requested those characters — whether through BDOS or BIOS calls," explains Dan.

"The first problem was to find a place to put the characters — a place for a *ring buffer.* This buffer could not get in the way of the system. It just so happens that there is a chip, the 8155, in the Vixen that has 256 bytes of memory in it not used for anything else."

This chip was the perfect place for a ring buffer that would also provide "type-ahead" (the ability to type ahead of the screen display and have the characters appear and be used by the system or the program, not have them disappear and not be used as most CP/M systems do). The "type-ahead" on a Vixen is such that you can type ahead, up to 255 characters, even while booting the system, before the BIOS is even loaded!

The interface to the buffer is very simple: your program sends an ESCape sequence to the console, followed by the characters you want to put in the "type-ahead" buffer. Now any program can send characters to the buffer and have it appear as typed keyboard data.

This means you can make operating routines that "front" the application programs — setting them up by putting commands in the "type-ahead" buffer. For example, you can set up WordStar with appropriate commands to change the margins and other settings, by running a ".SUB" file using the STACK command that places the WordStar set-up commands in the "type-ahead" buffer, which appear to WordStar as keyboard commands.

All of these improvements were made without changing the structure or addresses of routines in the CCP and BDOS modules of CP/M 2.2. This was a necessary requirement because programmers know the CCP and BDOS, and existing programs use these addresses. Also, programmers want to be able to put in their special "system patches" that assume that the CCP and BDOS modules are standard CP/M 2.2 versions.

"The rule was that every label and jump in the CCP and BDOS had to be identical to the standard CP/M 2.2 CCP and BDOS modules." Using Z80 instructions, Dan was able to code relative jumps inside the well-known CCP and BDOS routines. All entry and exit points are identical to the standard CP/M 2.2 modules. However, a given routine in these modules may be optimized to be shorter and faster — shorter in order to fit the added improvements.

In every BDOS there is one routine that a program uses to execute all other BDOS routines. It is essentially a "lookup table" that transfers control to a specific routine in the BDOS. Dan improved this routine to run seventy microseconds faster than the distributed version. "As a result, every BDOS call in the Vixen executes at least seventy microseconds faster than any other BDOS module in any other machine. And yet, every entry and exit point is identical to the distributed CP/M 2.2 BDOS."

Also built into the system is the ability to put a prompt message on the screen and wait for a character. The Prompt program can send ESCape sequences and Control characters to the console, so that you can send a Control-C to the console, or "paint" a message using screen controls.

The console driver has an added "window" feature: you can define the area of visible display as the current console. In other words, your program can "tell the console" that its world is only from row 1, column 1 to row 10, column 30. All other console commands and every console function, from then on, works in that reduced area — all scrolling, all characters, all cursor addressing and all video attributes work in

that "window."

The "window" has only one restriction: it must include either the top corner or the bottom corner. It can be as small as a single character, but it has to be the top corner or bottom corner. You can "paint" such windows from within a ".SUB" file (using the Prompt program) or even a BASIC program.

Function keys were implemented better than on the Osborne 1. They work exactly as they did on the Osborne 1, but now you can redefine each function key from within whatever program you are using. For example, from within WordStar you can change the Vixen function keys by pressing the function-key-setup key, then typing the number and definition of the key.

You can also switch the arrow keys from WordStar to CP/M and back again, while in WordStar (or any program). You can type the function keys faster because they, like all characters you type at the keyboard, are sent to the "type-ahead" buffer and executed in order. You can pound out 255 function keys as fast as you can type them, and all 255 will be executed.

Function keys can also be "nested" within other function keys, so that pressing one function key can cause several function keys to perform. While defining a function key, you can use the arrow keys to "edit" the function key definition, and use another function key to include its definition in the entire definition of a single function key. In this way you can use a function key to define another function key, including itself.

There is also a built-in "print screen" key — the Shift key pressed with the function-key-setup key causes everything on the visible screen to be printed. This key uses the CP/M IOBYTE (manipulated with the STAT command) to output the screen to whatever printer is assigned to the LST: device. Of course, you can "type-ahead" while the computer is printing the screen.

Memory and Hardware

The memory layout for the Vixen is a standard CP/M 2.2 layout with 60K available for running programs. The upper 4K is reserved as a display buffer, and "shadowed" behind it (using the same addresses) is the initialization read-only memory, called the "boot" ROM.

From a programmer's point of view, if you jump above F000H, you jump into the boot ROM. If you write into the area above F000H, you write into the RAM display buffer. If you read from the area above F000H, and you're below F000H when executing the read, you get the display buffer; if the read is executed from above F000H, the read gets the ROM.

Your program does not have to know the difference, because if you want the program to use ROM, you jump into ROM to read ROM areas. ROM can write into the display buffer by writing to the area above F000H.

The central processing unit (CPU) is very fast. There are no wait states in the this implementation using the 4 Mhz Z80A — it runs full speed all the time. The display refresh is independent of the instruction execution — the display processor updates the display from the 4K display buffer without holding up the CPU.

There is also a two-line "swing buffer" that works like this: while one line of characters is being displayed, the next line of characters is being updated during the refresh cycle of the Z80A. When the display processor gets to the end of the first line, the second line (the one freshly updated) is swapped with the first and displayed (while the first is then refreshed).

We perceived a faster display on the Vixen than on the Osborne 1. The speed of the display is largely governed by the CRT display system hardware, but the rate at which the display is updated is a function of the software. The difference we saw is the effect of the software.

The Package

The Vixen is bundled with nine software packages: WordStar and MailMerge 3.3, SuperCalc2, MBASIC, Media Master, Osboard, TurnKey, Desolation, and the CP/M 2.2 operating system and accompanying Digital Research utilities. Standard system programs like AUTOST, SETUP, COPY, and SYSGEN are also included. New system programs are STACK and PROMPT.

A character generator is provided as a separate ROM. Under program control you can have one of two 128-character sets with a cursor, or you can have a full 256-character set with no hardware cursor — the cursor would have to be implemented in software. So, for example, under program control you can switch back and forth between English and Arabic.

The computer itself consists of a main logic board and an input/output board. The input/output board has only one serial port (usually for a modem or an input device) and one parallel port (usually for a printer). It is easy to change the input/output board to add one from another company that might have a built-in modem, or more ports, or whatever. The power supply in the Vixen is the same one used in the Executive.

Osborne also has available the HD-10: a ten-megabyte hard disk (Xebec model 9710H) that is $7^1/_2$" high, $3^4/_{15}$" wide and 16" long. It comes with a cushioned carrying case so that the hard disk can be easily transported with the Vixen. The Vixen has a SASI interface to accommodate more drives.

The people who worked on this project through two cancellations and bankruptcy gave a lot of themselves to the machine. You can feel this when you talk to them about it — they are amazingly enthusiastic despite two years of setbacks. Each person we talked to had thought about every aspect of the package, with the result being a well-thought-out CP/M computer.

"The main thing about this machine is that it is a well-built, solid, working machine that has been thoroughly tested," says Fred Coury. "The logic design has been working since October of 1982. There has never been a bug found in it. And it runs every bit of CP/M software we have."

A review of the Vixen by Gale Rhoades, Executive Director of the First Osborne Group (FOG), appears in this issue on ***page 8.***

Wizard

Executive Bug Fixes and WordStar & dBASE II Patches

Brad Baldwin

Osborne Executive computers have been in use for about one-and-a-half years now, and several hardware/system software bugs have floated to the surface. The following list should bring you up-to-date on what is currently known about these problems and their subsequent fixes.

BIOS 1.0 and 1.1

BIOS 1.0 was the original release version shipped with Osborne Executives. It had a major bug concerning printer timeout errors, which affected serial or parallel buffered printers.

What happened was this: when a printer filled its buffer, it correctly told the Executive not to send any more data until the buffer emptied. If this period of time exceeded seven seconds, the Executive BIOS would become impatient and "time out." Printing terminated (while hair pulling initiated). A message appeared on screen requesting the user to unassign the device, which of course you couldn't since it was in use. If the answer was "no," it would only print a few paragraphs until the next timeout error occurred. Incidentally, the IBM PC has this identical problem with every version of their BIOS.

Osborne eliminated the timeout bug via updated BIOS version 1.1, which came with all new Execs beginning April '84. Unfortunately, BIOS 1.1 introduced a new bug: The control to switch back and forth between standard and alternate font rams — Control Tab (^TAB) — disappeared! This came as an unpleasant surprise to some users that had just discovered how to switch character sets with ^TAB (inadvertently omitted from Executive documentation) only to have it yanked away again when receiving the BIOS update.

At any rate, all has been taken care of and OCC now offers a properly functioning BIOS (1.1x?) for $25. (No whining, now. Just be happy it's available at all.) OCC will send out an updated replacement BIOS, free of charge, to those people that already purchased BIOS 1.1. Send OCC back the BIOS 1.1 diskette they sent you and you'll get a replacement copy.

If you're a "do-it-yourselfer," obtain the September 1984 issue of the *FOGHORN* (FOG, P.O. Box 3474, Daly City, CA 94015-0474) and look up the "Executive Notes" article written by Jim Switz. He reports in detail how to patch OCC's ^TAB fix using a public domain program called "DU" (Disk Utility). (For already knowledgeable DU 'ers: change the 15th byte, hex 0E, located on system track 2, sector 34 from a 09h to a FEh.)

ROM 1.20 and 1.21

The original Osborne Executive ROM, 1.20, would not work with a few programs, such as Turbo Pascal or Mychess. It seemed the code was just too darn fast (well, something like that...) as further evidenced by having to place spaces into WordStar function keys to delay command processing.

With ROM 1.21, internal code has been changed so the ROM is a tad slower allowing Turbo and Mychess to work, and the change also eliminates the need for delay spaces in function keys. Case closed (we hope). The ROM is available for $45 from OCC, and contains all pertinent instructions for installation.

Monitor Problems: Waver, Shrink, Contrast and Overscan

There is no doubt that the Executive monitor is a source for much frustration. According to Switz, almost all Exec monitors exhibit one or more of the above captioned problems. Fortunately, fixes are available.

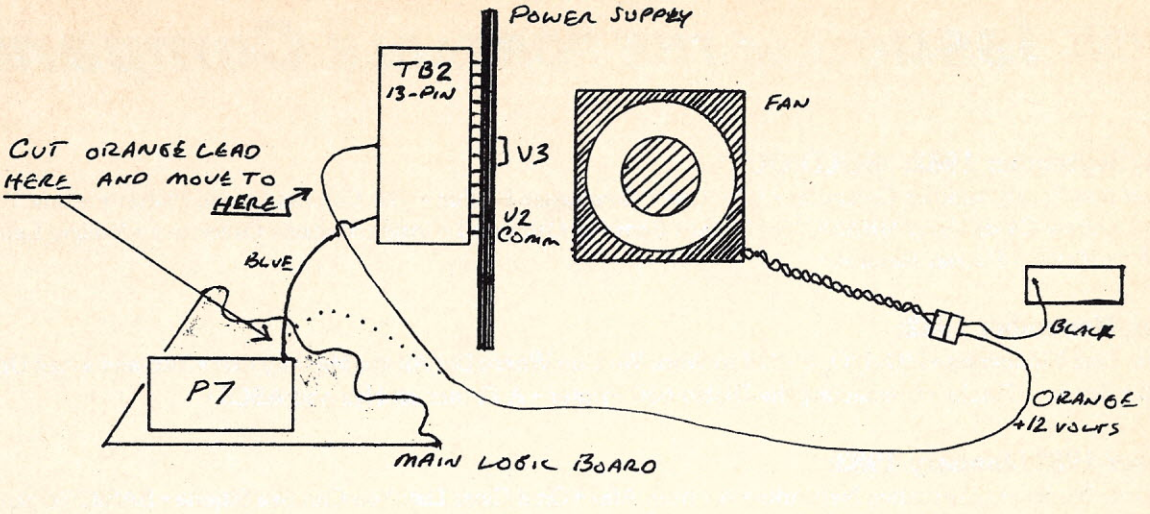


Figure 1. *A fix to get rid of waver in Osborne Executive monitors.*

Waver is defined as slight horizontal waving caused by interference from the fan.

1) OCC fix: Place a 47 ohm, 2 watt resistor in series on one of the fan leads. Slows down fan inhibiting proper cooling.

2) Ken Pachmayer's (Memphis, Tennessee) solution: The fan is initially wired to the V2 pin on the 13-pin connector near the rear edge of the power supply board. V2 is rated at 1.2 amps and also services the monitor. The fix is to move the orange fan (+) lead to V3 on the same connector plug, which is rated at a higher 2.1 amps. To do so, cut the orange fan lead at the P7 main logic board connector and reconnect it to the power supply's V3 pin (solder to existing small orange lead already at that position). The fan slows down only when drives run, so the computer stays cool. See figure 1 for a diagram of the fix.

3) Get rid of the DC fan altogether and put in an AC unit.

Of these three choices, the preferred method is #2, and if you can afford it, go with #3. Both #2 and #3 have been tested on dozens of computers without problems while the 47 ohm fix has caused some overheating troubles.

Shrink — severe jitter or collapse and the screen can ultimately stay collapsed. The cause is known: The CRT manufacturer's quality control inspectors and Osborne parts inspection personnel failed to notice that monitor boards had numerous cold solder joints. Most likely, all these cold joints were due to incorrect wave solder temperature.

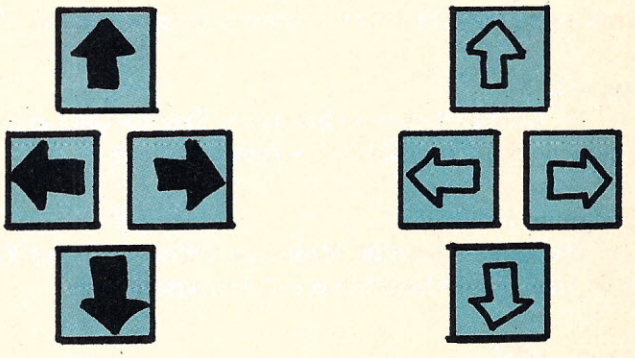
The fix requires resoldering every solder connection on the board. You may want to use a solder sucker and fresh solder to achieve an optimum bond.

Contrast — dim characters are too dim and the contrast control offers no relief. One possible fix, as suggested by Clarence Shepard (Dayton, Ohio), is to swap out resistor R12 (470 ohms — located in the area behind the reset button) with a 220 ohm resistor, providing a greater range in contrast control. It works.

Overscan — only a problem when using certain external monitors. Overscan eliminates the border surrounding the the 80 x 24 character display, so that at the extreme left and right columns, and top and bottom lines, characters disappear — overscan. If the monitor has a horizontal control, such as the USI PI series, then some overscan can be compensated for by moving the scan to the right. Of course, now your far right columns have disappeared. Unfortunately, this is the best we can currently offer until a hardware fix is found. We're working on it, folks.

Keyboard

OCC has shipped keyboards from two different vendors. The way to tell them apart is by the arrow keys — they're either solid or outlined:



The ones currently shipped are made by Oak, have outlined arrow keys and sometimes experience a strange problem: intermittent non-functioning keys, especially the F and S. The problem may originate elsewhere, such as in the Exec hardware, so we're not pointing any fingers at this time.

No matter, the fix is simple. Get inside your keyboard, unscrew the internal ground cable strap and tape it so it doesn't float around or touch ground. According to one computer service shop, the problem disappears and no new ones are added.

We'll continue to report bugs and problems with both Osborne 1 and Executive computers, along with suggested fixes.

Continued on page 23

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Wizard from page 21

Patch to dBASE II Version 2.3.

Osborne 1

```
A>DDT B:DBASE.COM↵
DDT Vers. 2.2
Next PC
4700 0100
-s130↵
0130 05 01↵
0131 1A .↵
-s154↵
0154 80 50↵
0155 18 .↵
-s395A↵
395A 3A C9↵
395B 5A .↵
- ^C

A>SAVE 70 B:DBASE.COM↵
Delete B:DBASE.COM? Y↵
```

Executive

```
A>SAVE↵
A>SID B:DBASE.COM↵
CP/M 3 SID - Version 3.0
NEXT MSIZE PC END
4700 4700 0100 CFFF
#s130↵
0130 05 01↵
0131 1A .↵
#s154↵
0154 80 50↵
0155 18 .↵
#s395A↵
395A 3A C9↵
395B 5A .↵
# ^C

Enter File: B:DBASE.COM↵

Beginning hex address 0100↵
Ending hex address 4700↵
```

Figure 2. *Patch to make the Osborne 1 version of dBASE II (version 2.3) run on an Executive.*

The Wizard Replies

The mail has been overwhelming. Thanks for the feedback and support.

Q: How can I get an Osborne 1 version of dBASE II to work on my Executive?

Q: Is it possible for dBASE II to display 80 columns on my Osborne 1 with the 80 column upgrade package? It currently shows only the 52.

A: For either of these situations, perform the patch shown in Figure 2 using DDT or SID on dBASE II version 2.3. With dBASE II version 2.4, an Osborne 1 and an 80-column upgrade, perform the patch in Figure 3. (For all, put DDT or SID on Drive A, dBASE on Drive B.)

Q: Is there a way to directly patch WordStar 3.3 as is possible with version 2.26? While 3.3's menu-driven patcher contains several features that I need, it still leaves out many more available to 2.26's direct patching method. Also, with 3.3, the USR1 - USR4 patch areas are only four bytes long, yet I have some sequences that are five or more bytes in length. With 2.26, I could patch a string that "slopped" into an adjacent unneeded USR area.

A: WINSTALL does indeed have a feature enabling direct patching (deliberately undocumented) to all the labels familiar to WordStar 2.26 hackers. To use it, at WINSTALL's Installation Menu where it says:

```
Enter the letter of your choice (A/B/C/D/E/F/X)
```

Patch to dBASE II Version 2.4 for Osborne 1 80-column upgrade

```
A>DDT B:DBASE.COM↵
DDT Vers. 2.2
Next PC
4D00 0100
-s130↵
0130 05 01↵
0131 1A .↵
-s154↵
0154 80 50↵
0155 18 .↵
-s39E3↵
39E3 3A C9↵
39E4 5A .↵
- ^C
A>SAVE 76 B:DBASE.COM↵
```

Figure 3. *Patch to make the Osborne 1 version of dBASE II (version 2.4) run with the Osborne 1 80-column upgrade.*

Type in the "plus" character instead (+). This enters into WordStar's patch areas where the user can alter program defaults and add customized printer routines, among other things. Figure 4 lists labels and addresses for both WordStar 3.3 and 2.26, and includes the present set value (just for 3.3 — 2.26 in most cases is the same) and description. Like version 2.26, version 3.3 accepts either labels or hex addresses.

Figure 4. *The labels and addresses for both WordStar 3.3 and 2.26, with the present set value for version 3.3.*

Label Name	2.26 Addr	3.30 Addr	Default Value	Description
WID	0249	0233	50	Screen Width (See #1)
ITHELP	0360	034D	03	Help Level (00-03)
NITHLF	0361	034E	FF	"For maximum help" message.
ITITOG	0362	034F	FF	Insert ON or OFF Mode
ITDSDR	0363	0350	FF	No-file directory display
INITPF	0366	0351	08	Line Height, 1/48ths
	0367	0352	42	Paper Length, lines, (.PL)
	0368	0353	10 02	Paper Length, 1/48ths
	036A	0355	08	Line Height, again, 1/48
	036B	0356	03	Top Margin, lines, (.MT)
	036C	0357	18 00	Top Margin, 1/48ths
	036E	0359	08	Line Height again
	036F	035A	02	Heading Margin, lines, (.HM)
	0370	035B	10 00	Heading Margin, 1/48ths
	0372	035D	08	Line Height yet again
	0373	035E	08	Bottom Margin, lines, (.MB)
	0374	035F	40 00	Bottom Margin, 1/48ths
	0376	0361	08	Line Height yet again
	0377	0362	02	Footing Margin, lines
	0378	0363	10 00	Footing Margin, 1/48ths
	037A	0365	08	Line Height yet again
	037B	0366	00	Must be 00 for stand. char width
	037C	0367	0C	Std char width, 1/120ths, (10)
	037D	0368	0A	Alt char width, 1/120ths, (12)
	037E	0369	08	Page Offset during printing
INITLM	037F	036A	00	Left Margin less 1 (^OL)
INITRM	0380	036B	40	Right Margin less 1 (^OR)
INITSR	0381	036C	03	Sub/Superscript roll, 1/48ths
INITWF	0385	036D	FF	Word Wrap (^OW)
	0386	036E	FF	Right Justify (^OJ)
	0387	036F	FF	Variable Tabs (^OV) (See #2)
	0388	0370	00	Soft Hyphen Entry (^OE)
	0389	0371	FF	Hyphen-Help during ^B command
	038A	0372	FF	Display Control Char (^OD)
	038B	0373	FF	Display Ruler (^OT)
	038C	0374	FF	Dynamic Page Break (See #3)
	038D	0375	FF	Page Break Display (^OP)
	038E	0376	01	Line Spacing, 1-9, (^OS)
	N/A	0377	00	Column Block Move (^KN)
NONDOC	N/A	0378	00	Non-document Mode (See #4)
DOTSON	0396	0379	FF	Dynamic Dot Command Interpret.
DECCHR	0392	037A	2E	Decimal Point Char (.)
DOTCHR	0394	037B	2E	Dot Command Char (.)
RVELIM	03D8	0389	2C	MailMerge field separator (,)
RVQUOT	03D9	038A	22	MailMerge data encloser (")
HZONE	0399	03C9	04	Hyphen-help stops (See #5a)
VOWTAB	039E	03CE	59	Vowel Table begins (See #5b)

NONCON	03A3	03D3	41	Vowel Table continues
PAGFIL	03B8	03E8	2D	Page Break characters (- - - -' s)
PODBLK	03CA	03F8	00	Print menu: disk file output
	03CB	03F9	00	form feeds
	03CC	03FA	00	page format suppress
	03CD	03FB	00	pause between pages
ITMIJ	03D4	03FE	FF	Micro-justification (.UJ)
ITBIP	03D5	03FF	FF	Bidirectional (.BP)
AUTOBS	0422	0430	00 + 10	Auto backspace table (See #6)
BLDSTR	0691	069A	03	Boldface Strikes (^PB)
DBLSTR	0692	069B	02	Double Strikes (^PD)
PSCRLF	0696	069C	02 0D 0A + 8	CR/LF string (See #7)
PSCR	06A1	06A7	02 0D 00 + 5	Overprint Sequence
PSHALF	06A8	06AE	00 + 6	Half-Line Feed
PBACKS	06AF	06B5	00 + 5	Back-space String
PALT	06B5	06BB	00 + 4	Alt Char String ^PA
PSTD	06BA	06C0	00 + 4	Standard Char String ^PN
ROLUP	06BF	06C5	00 + 4	Superscript String ^PT
ROLDOW	06C4	06CA	00 + 4	Subscript String ^PV
USR1	06C9	06CF	00 + 4	Patchable Strings: ^PQ
USR2	06CE	06D4	00 + 4	^PW
USR3	06D3	06D9	00 + 4	^PE
USR4	06D8	06DE	00 + 4	^PR
RIBBON	06DD	06E3	00 + 4	Alternate Ribbon ^PY
RIBOFF	06E2	06E8	00 + 4	Ribbon Standard ^PY
PSINIT	06E7	06ED	01 0D + 15	Printer Initialization
PSFINI	06F8	06FE	00 00 + 15	Print End String
SOCHR	070B	070F	2D	Strikeout character (^PX)
ULCHR	070C	0710	5F	Underline character (^PS)

1. 50H = 80 columns. Osborne 1: Patch up to 80H for a maximum 128 column screen width before word break is forced. A 4FH patch allows INSERT ON message to be displayed entirely within the 52 column screen. Executive: Do not change. Screen width already accepts up to 240 columns before forced break occurs.

2. When on, tabs from ruler line. When off, tabs every 8 columns.

3. 00 eliminates high order bits used for page breaks — line breaks and page number will not show. Cannot be changed in mid-edit. Use the next command (Page Break Display) instead.

4. When entering file directly, e.g., `A>WS B:filename` ↵. Command not applicable with WordStar 2.26.

5a. Approximates maximum number of columns a full word may stop short of the right margin without stopping for a hyphen-help (if on). Increase for fewer stops, decrease for more stops.

5b. VOWTAB/NONCON defaults:

```
59 5B 5D  7B 7D 41  45 49  4F 55  00 00 00 00
Y  [  ]   {  }  A   E  I   O  U   00
```

The cursor will stop at these hyphen-help points. You can patch three more bytes at the end of the table for additional hyphen-help stopping points, but the last byte must be 00.

6. Up to ten characters can be patched into this table. WordStar will automatically enter a backspace (^H) when the character is encountered in the file. 00 must be the last byte entered.

7. Printer String Carriage Return Line Feed sequence. Contains 11 bytes altogether, the first number designates number of hex bytes to follow, e.g., 02H = read the next two bytes, 07H = read the next seven bytes. Maximum value is 0AH, which would read CR, LF and eight delay nulls. All WS printer patches in this section work the same way, where the first byte of the string tells how many bytes are to follow.

Figure 4. *The labels and addresses for both WordStar 3.3 and 2.26, with the present set value for WordStar version 3.3.*

Key 1:	/OD ALL ↵ P	Key #1 = Print using printer's current initialization.
Key 2:	/OD ALL ↵ SW230 ↵ S ^X ^] ↵ P	Key #2 = Compressed print at maximum 230 columns.
Key 3:	/OD ALL ↵ SW136 ↵ S ^X ESC key 1 ↵ P	Key #3 = NLQ, 10 pitch
Key 4:	/OD ALL ↵ SW163 ↵ S ^X ^\ ↵ P	Key #4 = NLQ, 12 pitch
Key 5:	/OD ALL ↵ SW163 ↵ S ^X ESC key 1 ^ \ ↵ P	Key #5 = data processing, 12 pitch
Key 6:	/OD ALL ↵ SW136 ↵ S ^X ↵ P	Key #6 = data processing, 10 pitch

Note:

Once a printer becomes initialized, it stays that way until further notice, so use key #1 for printing successive spreadsheets of the same style.

Figure 5. *Suggested function keys for use with SuperCalc to control an Okidata 84 dot-addressable printer.*

Q: How can I get the most out of my Okidata 84 dot addressable wide-carriage printer when using SuperCalc on my Executive? The Okidata has all sorts of special print style capabilities and I would like to print spreadsheets "on the fly" in compressed, 10 pitch, 12 pitch, near letter quality or data processing modes. I also want to maximize characters per line printing according to what pitch the Okidata is set at.

I tried SuperCalc's setup option (the one activated from within a spreadsheet) but I didn't know what codes to input and in what format.

A: SuperCalc's print-time setup option only accepts ASCII control codes and escape sequences. So, Okidata printer control codes must be translated accordingly, which is not hard to do with an ASCII conversion table. But that's putting the cart before the horse because we first need a way of controlling the printer quickly and easily on the fly.

The best way (the only way?) is to program function keys with the necessary sequence of events. Let's start with an easy one, programmed into function key #1:

```
/OD ALL ↵ P
```

SuperCalc interprets this as meaning "Output Display All (press Return) Printer." (The ↵ symbol stands for the Return key). The effect is simple: with one keystroke, you print a spreadsheet. (In the above example, spaces between characters were added for clarity only.)

We now have a means by which to print but still need carriage and print control. At 10 characters per inch (cpi), your printer can print 136 characters to the line; at 12 cpi, 163 characters; and at 17 cpi, 230 characters. These numbers will go into the "Setup Width command."

Next, needed printer hexadecimal codes are translated into ASCII control codes, e.g., 1DH = ^] (12 cpi), 1CH = ^\ (17 cpi) and so on (^ is the Control key). We also need the Okidata's "clear buffer" code, 18H, translated to ^X. Okidata 's NLQ generator, ESC 1, needs no translation as it is already in a mode understandable by SuperCalc.

The clear buffer code is important since it allows us to dump previous commands and start with a fresh slate.

Thus, Figure 5 contains the suggested function keys for your particular application. (Again, spaces are for clarity only. Do not input them.)

Q: I might have a bug in the WordStar for my Executive. MailMerge does not recognize the command for changing the left or right margin (.LM and .RM, respectively). Instead of showing an M in the right hand side of the screen, it shows a ? instead. The file will not print using the new margins.

A: The .LM and .RM commands are not features in the WordStar release version on the Executive, although they are mistakenly discussed in the Reference Guide.

MicroPro said they canceled the .LM command since it was somewhat superfluous to the page offset (.PO) command, and also because it never worked quite right in all file situations with all kinds of printers. If you want to change left margins, use the .PO command to increase or decrease the page offset thereby affecting the left margin.

The .RM command disappeared with no reason offered.

My thanks to Jim Switz, FOG librarian and president of Microtech Computer Services.

Brad Baldwin is a partner at Sheehan and Baldwin Communications, a high-technology writing business. He was formerly an engineer at IBM and technical editor with The Portable Companion.

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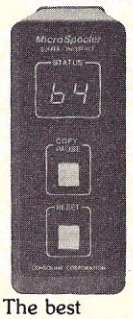

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Photo: MicroSpooler 64 K P-P

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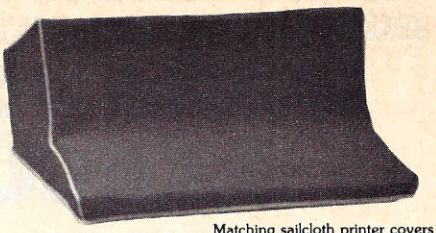

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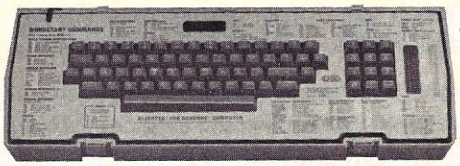

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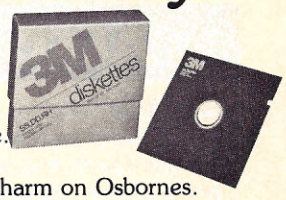

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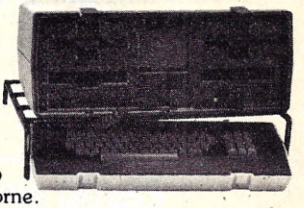

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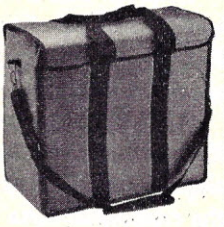

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Business

Comparing Data Base Management Packages

Using several data base packages to manage a mailing list.

Cheryl Peterson

As my do-it-yourself project for this month, I decided to create a data base of business software available for Osborne computers. Since I had copies of Personal Pearl, PC-FILE, File-It and Filebase (all data base management packages), and a program generator called Quikpro+ available, I tried them all. I'm happy to report satisfactory results with each of them.

My original purpose was to create a card file index containing the name, address, phone number and programs (with prices) available from each software manufacturer. I immediately decided that the program list would be representative of each manufacturer's goods, rather than all-inclusive. To save time and space, I decided to list a maximum of five programs for each company.

My second goal was to print mailing labels of the names and addresses of the companies. I also wanted to sort the companies by types of application of the software manufactured; e.g., word processing, data base management, graphics, and other applications. Finally I wanted to print lists of each application (figure 1).

```
COMPANY ..........................
AD1 ..............................
AD2 ..............................
CITY ST ZIP ......................
TYPE ..    PHONE ...-...-....
```

Figure 1. *Data base form with Personal Pearl.*

Personal Pearl

I started with Personal Pearl since I had already experimented with it when it first arrived with my modem (I got it on a special giveaway.)

As I have a single-density Osborne 1, the program occupies nine disks, not including data file disks. If you can afford the expense of disks, this is no real hardship since the program modules are interconnected and the program is menu driven. Any menu option that requires changing a disk clearly prompts you to do so, making it easy to move from module to module. However, it is tedious to change disks so often.

Personal Pearl has five major modules: design forms, design reports, enter data, produce reports and install (forms and reports). On my system these modules are on five separate disks. An "infosystem" disk contains sample data, so you can play around and get comfortable with the commands without risking your own files. The three other program disks contain file maintenance, sort and system startup utilities.

The documentation is laid out in an interesting manner. There are two tutorial sections (easy and advanced); they have separate indexes. The first tutorial shows how to set up an address book. By the time you finish this section, you start to feel familiar with the program and will have created a usable data base. The feeling of accomplishment that you get is a great incentive to continue.

A great feature of Personal Pearl is the editing functions. Most are the same as those WordStar uses. Moving the cursor around and deleting text require commands identical to WordStar's. Use the same commands as WordStar to turn insert on/off (^V), page forward (^C) and back (^R) or insert a blank line (^N). This makes learning the program much easier for habitual WordStar users. Those who don't know WordStar commands will find the handy reference guide listing all the commands included with Personal Pearl invaluable.

In the report design area, there are several convenient features. When de-

signing a new report, you have options to clone an old report and make changes to it, use the same layout as your input form, or start completely from scratch. There are three different types of reports to choose from: fixed, list or SuperCalc.

In fixed report mode, each record appears on a separate page. The list option summarizes the data, placing as many lines as possible on each page. The SuperCalc option creates a SuperCalc input file with all numeric data areas assigned to cells of a file that can be read as a SuperCalc spreadsheet. All non-numeric data is ignored. Personal Pearl then names your new file TEMP.CAL, so that SuperCalc can read the file.

Even if you have a 52 column screen, you can design 80 column reports. Personal Pearl will let you design your report form with data areas that are continued on the next line.

For the new computer user, some of the more advanced features may seem difficult to implement. As you gain experience, these features can be most useful. Sharing data between files and doing calculations based on those data produces beautiful reports. The privacy features of this program make it attractive for many small business applications. By properly setting up the data bases, secretaries and bookkeepers could be allowed only limited access to files. Since data can be shared between up to five files, a manager can have a master data base with up to five other people's files, allowing access to all the information. Since information can be passed in only one direction, security is maintained.

The most advanced features and "help" text are described at the end of a reference manual with eight appendices. These are also indexed. Because of the disk space that the Personal Pearl program modules require, the "help" text is found only in the manual, rather than on the screen (on double-density or larger disk formats, this may not be the case). The appendices include messages and error codes, program stop codes, installation controls, a section on setting up your working disks, general file maintenance procedures, control key commands and menu prompts. There is also a section on using SuperCalc with Personal Pearl.

Few programs are perfect, however. Although I could find no major problems, a beginning computer user might. Finding answers to questions in a manual of this size can be difficult, so I called Pearlsoft to find out how much support is available. Directory assistance in Oregon supplied the phone number, and Rita Miles (director of corporate communications) informed me that Relational Systems International Corporation (Personal Pearl's parent company) has a department dedicated to customer support. Assistance is available by calling (503) 390-6880 and asking for customer support (weekdays 8-5, Pacific Time). PearlSoft recently had a disastrous fire, but they are now fully operational.

After spending a half hour to create my working program disks I was ready to begin designing my data entry form. Though form design was completed in a short while, several disk swaps were required to install my data entry form. Once the form was installed, I was ready to start entering data.

Since I wanted my report form to be mailing labels, I couldn't use my entry form for my report form. This meant that I had to first load my entry form and then modify it to print just the first four fields: name, address1, address2, and city ST zip. I also had to install the report form, requiring several disk swaps.

Page twenty-three in the advanced tutorial advises the use of ‹BLANK› to force blank lines in a report. If you look at figure 2, you will see what my printer thought of ‹BLANK›. Figuring the manual wasn't saying exactly what it meant, I went back and re-designed my report, this time leaving blank lines where I wanted blank lines. The result is in figure 3.

All-in-all, the program did what I wanted it to do and I was happy with it.

```
<BLANK>
COMPU-HAUS
1840 NW 50TH TERRACE
KANSAS CITY MO 64151
<BLANK>
<BLANK>
<BLANK>
DATAACCESS, CORP.
4221 PONCE DE LEON BLVD.
CORAL GABLES FL 33146
<BLANK>
<BLANK>
<BLANK>
CONTINENTAL SOFTWARE CO
11223 SOUTH HINDRY AVE.
LA CA 90045
<BLANK>
```

Figure 2. *Personal Pearl original label report printout.*

```
COMPU-HAUS
1840 NW 50TH TERRACE
KANSAS CITY MO 64151


DATA ACCESS, CORP.
4221 PONCE DE LEON BLVD.
CORAL GABLES FL 33146


CONTINENTAL SOFTWARE CO
11223 SOUTH HINDRY AVE.
LA CA 90045
```

Figure 3. *Personal Pearl adjusted report printout.*

PC-FILE

After trying PC-FILE, I'm not sure that I would be willing to pay the high retail price for Personal Pearl. PC-FILE is menu driven and designed to be simple. You are completely instructed at each step. The only drawbacks to PC-FILE are the limits on the field lengths and the maximum of 37 fields. For a small to medium sized business, this probably wouldn't be a problem. It didn't limit me in my application.

The program first asks what drive to put the data on, then lists the previously defined files on the disk in that drive. It asks for a file name of 1-8 characters because PC-FILE adds its own suffixes. When a new file name (one not previously defined) is received, you are asked for the key field name. If you want the data field to be numeric, you must add a # sign to the end of the field name. For each data field that you define, PC-FILE will

```
1
2  1 ____________________
3  3 ____________________
4  4 ____________________
5
6


SOFTWARE COMPANIES

COMPANY                          ADDRESS
CITY,ST ZIP                                TY


1....................          3....................
4....................                     5.
```

Figure 5. *Two sample test reports using Quikpro+. The first is the label report, and the second is the columnar report.*

```
JRT SYSTEMS
1891 23RD AVE.
SAN FRANCISCO CA 94122


HONOR SYSTEM SOFTWARE
2562 E. GLADE
MESA AZ 85204


FYI, INC.
PO BOX 26481
AUSTIN TX 78755


SOFTWARE COMPANIES  PAGE -  1

COMPANY                          ADDRESS
CITY,ST ZIP                                TY
=================================================

DIGITAL MARKETING                2670 CHERRY LANE
WALNUT CREEK CA 94596                        0
KELLER CONSULTING CORP.          BOX 163
VINTON IA 52349                              0
MICROCOMPUTER ASSOCIATES, INC.   PO BOX 3535
ARCADIA CA 91006                             0
```

Figure 6. *Report printouts from Quikpro+ program. On top is the labels report, and at the bottom is the columnar report. Any columns that won't fit the page width carry down to next line.*

```
FILE:xxxxxxx

     (1) ADD a record
     (2) MODify a record
     (3) DELete a record
     (4) DISplay a record
     (5) FINd a record
     (6) LISt or clone
     (7) SORt the index
     (8) see the record LAYout
     (9) alter a field NAMe
     (0) END or change database

Your Command:___
```

Figure 4. *The master menu PC-FILE.*

request the field length. When you finish defining fields, the program presents you with the Master Menu Screen (figure 4).

To enter a command, press the number of your choice or type the appropriate three letter code. The list option sends information in whatever report format you designate to the screen, a printer or another file. This data can be used to create a MailMerge file. Data can also be read into a file from another program.

Because the program is so easy to use, the documentation is simple (20 minutes average reading time) and easy to read.

How much would you pay for a program like this? In this case, *nothing* if you don't like it. If you do like it, the price is up to you. How so?

PC-FILE was written and is maintained by Jim Button of Bellevue, Washington (PC-FILE III version 9.1 is the latest version of this user-supported program, written in Microsoft compiled BASIC for the IBM PC). The Osborne version of PC-FILE was converted from version 8.6 of PC-FILE (Osborne's MBASIC and IBM's PC BASIC are quite similar, according to Button) of PC-FILE. Button offers the program to Osborne owners through direct contact or user groups. He invites everyone to try the program and asks for a contribution only if they find the program useful. He suggests $35 and encourages copying and sharing of the program. The documentation is on disk, to be printed on your printer.

I first found PC-FILE at my local user group meeting. A point of interest; the club as a whole decided to send him the $35 and several members have also sent

```
********** INITIAL FILEBASE OPTIONS**************
*                                                *
*1-SORT or SORT & MERGE 2 FILES into 1 NEW FILE   *
*2-SELECT RECORDS from 1 or 2 FILES into NEW FILE *
*3-SORT & SELECT RECORDS at the SAME TIME         *
*4-PRINT LABELS, ENVELOPES, and other listings on *
*    the SCREEN or PRINTER                       *
*5-ADD new FIELDS to RECORDS from EXISTING FILE   *
*    & OUTPUT the EXPANDED RECORDS to NEW FILE    *
*6-CREATE a NEW FILE and ENTER DATA               *
*7-ADD (key in) NEW RECORDS to an EXISTING FILE   *
*8-MOVE some FIELDS from a FILE to a NEW FILE     *
*9-UPDATE FIXED LENGTH RECORD FILE or SEARCH by KEY*
*10-CONVERT FILE to FIXED LENGTH RECORDS to use (9)*
*11-CHANGE DATA DISKS IN ANY DRIVE                *
*? - Entry of ? at prompts that begin with ? =    *
*    BACK TO MENU                                *
* CNTRL C at any prompt will end program BUT...   *
*                                                *
*DO NOT USE CNTRL C DURING DATA ENTRY OR UPDATE!!!!*
**************************************************

Please select option (1-11) or (Q) to Quit program _
```

Figure 7. *Main menu of FILEBASE.*

contributions. Sending a contribution makes you a registered user and offers many benefits. If you want to obtain a copy of PC-FILE and your local user group doesn't have it, send $35 and a self-addressed, postage-paid return mailer to Jim Button, P.O. Box 5786, Bellevue, WA 98006.

Quikpro+

Quikpro+ is different in that it generates programs in MBASIC based on your design for your application. It first writes a program to generate a screen and assign your data file. You can name your generated program and associated data file whatever you like. You can go directly from the Quikpro+ program into your newly created data base manager and start entering data.

Quikpro+ generates report programs to your specifications. Any or all fields from your data file may be used in the report form. While writing your report form, you can print sample forms to be sure the format is what you want (figure 5). Reports may be in columnar or list form (figure 6).

The documentation for this program is lacking in only one area. The program limits the number of characters available for each record to 256. The documentation doesn't mention this. Also not documented is how you determine record size. The record size doesn't include the standard form that you develop. It also doesn't include calculations on fields, if the results are for display only. That is, each time the program runs, the calculations are done and displayed, but they aren't stored on disk. I learned this from the program's author, not from the documentation. The program will route you back to the design stage if you go over the allotted 256 characters, so you can shorten your fields or reassign some calculations to be display only, once you are aware of this limitation.

After Quikpro+ writes your application program, it will print your documentation, including table of contents, illustrations showing your record layout, field lengths and key field. Full instructions on how to get the program up and running, etc. are included.

At $150, Quikpro+ has the potential to do many useful things for a business. If you have programming experience, a little creative use of Quikpro+ could save purchasing other more expensive specialized application programs.

I understand the updated version of this program has several improvements. These comments are based on the original version.

Filebase

Filebase (from EWDP Software) was an ideal program for my project. The instructions for creating work disks were easy to follow, once I understood that all the modules wouldn't fit on one single-density Osborne disk. After copying (with PIP) the necessary files to a couple of disks, all I had to do was type `FILEBASE↵` (↵ stands for the Return key). The program loaded in less than a minute and presented me with the main menu (figure 7).

I misplaced the special insert that instructs single-density Osborne users to use the second Filebase disk with menu options 4 through 11. This meant that when I tried to create a new database (option 6), the program couldn't find the module it was looking for on the disk and gave me a cryptic error message. It took me only a moment to look up the message in the table at the back of the manual. Suspecting that something was amiss, but not knowing what, I placed a call to EWDP. A pleasant-sounding woman answered and informed me that Mr. Markowitz wasn't available, but if I left my number he would get back to me. Surprisingly, he did. Immediately!

A short conversation confirmed I was missing a section of the documentation (misplaced while we were moving from one apartment to another). Mr. Markowitz was most helpful and shortly thereafter I was laying out my data entry form.

One especially nice feature of Filebase is the prompts. For instance, `Enter field # to change or <RETURN> if no more changes` is pretty clear. Prompts that are ambiguous like `Enter name of file to create` cause the program to respond with a better prompt if the input isn't what the program needs. In this instance, the program required you to specify the drive identifier *and* the filename. Because the program's prompts have been well de-

```
SwanS PO Bo Colum busin File- $49.95 Mail- $49.95
oftwa x 101 bia M ess   It          It
re    4     D 210
            44

FYI,I PO Bo Austi busin Super $195.0 Mail  $195.0
nc.   x 264 n TX  ess   File  0     List  0
      81    78755

Ruff  PO Bo Plant graph Super $29.95 Mate  $10.00
Softw x 96   City ics   Graph
are          FL         ics
```

Figure 8. *Printout of software data base using File-It's default format. None of the companies listed here were marketing more than two software packages. If they had been the printout would have continued out to 80 columns.*

signed, the tutorial section at the back of the manual is almost redundant. The manual is most useful when you need help with sorts and searches.

The search features of this program are great. You can search numerically or alphabetically, whole fields or just specified strings, on any field. Locating a particular record is easy with these search options. In fact, the program is so versatile you can search on last names in a full name field or on zip codes in a "city ST zip" field. One user even found a way to search for all entries from a given state, even though the data was entered in a "city, ST zip" format.

Printing my labels was easy. In fact, it took less than five minutes. I chose the print option from the main menu, and entered my filename when asked. Then I was asked for a second filename. (The program allows searching, sorting and printing from two data bases simultaneously with the second file's entries being appended to the first.) Press Return for the second file if you want only one file.

The program displays the first entry in the data base on the screen (to refresh your memory of the data layout). You can print the first record or go to the next one. This is an excellent idea, since you may need to recall which field you want the program to search on. If you want to print all records, you can print each one individually by paging through them. A faster way to print all records is to select the batch print option (and answer a few questions).

Press Return to leave the review mode and go into batch print mode. The program asks `Want select/exclude parameters?` This is your chance to eliminate the records that don't interest you, and use all of the nice search features. The documentation on narrowing down your records is quite thorough.

There are five output choices; to the screen, to the printer, labels, label format style to printer and label format style to screen. This section of the program is well designed. Choosing label format causes the following questions to appear:

```
# to print as item 1 -(RETURN=NO MORE)
# to print as item 2 -(RETURN=NO MORE)
# to print as item 3 -(RETURN=NO MORE)
```

These questions continue as you type field numbers, until you press a Return by itself, indicating no more fields. You then see the following:

```
Tab position to start (1-100)
# of lines to skip between each record
(1-66)
# of copies of each record to print
(1-100)
Position labels/paper & hit RETURN
Pause for paper/label/envelope
changes (Y/N)
```

That's it! If you choose to pause after each record, it will prompt you to change the envelope, label or paper. My first printout was perfect.

After you finish printing, the program gives you the option to print the information in a different format. This means that if you wanted to print all the information in each record and then print just the mailing labels, you wouldn't have to go out to the main menu, choose your filenames and go through the whole process again. If you choose not to do another listing of the same file, it asks if you want to print anything from a different file, before exiting to the main menu.

As you can see, this program is not terribly complicated to use and has many versatile features. It certainly performed my task well.

File-It

Using File-It (from Swan Software) was an interesting experience. My first attempt was made late at night and I think my fingers were operating on a different wavelength from my brain.

File-It is a well-designed data base manager. It certainly deserves an "A" for user friendly. The instructions for creating the working disks are easy to follow. Creating your data entry form consists of moving the cursor around the screen and typing in the prompts you want to appear. Each identifier is followed by a colon, so the program knows where the data will be entered. For my purpose, this procedure was easy.

Laying out my form took less than five minutes. Unfortunately, I managed to do something wrong (I have no idea what was wrong). Although my form looked fine on the screen, when I started entering my data I couldn't get the cursor to jump into my "city ST zip" field. After playing around with it for a while, and not solving the problem, I decided to start over at square one.

File-It requires a separate disk for *each* data base. This means you can't keep your address book and your appointment calendar on the same disk. That's not bad, but if you mess up, you can't just start a new entry form, since File-It includes a special formatting program, which first initializes a disk for use with File-It. Disk initialization takes several minutes; long enough to read a few pages of the manual.

With a newly-formatted and initialized disk and no clues to what went

wrong, I retired for the night and hoped my fingers and head would be talking to each other properly by morning. Evidently they were, as I had no difficulties in starting over the next day. I was able to create the form, type in software vendor names and products, and print labels.

The print reports section has several parts. The first part automatically formats the data to be printed. It isn't necessary to print all the fields in the data entry form. The reports are formatted to divide the 80 columns allowed for most printers into equal sections; one field per section. If a field contains more letters than its corresponding column, the data is divided into sections and printed in several lines (figure 8). The program requests a report title to print at the top of the page, and does its own pagination.

A few extra steps are required to print labels. While still in the main program, you must do a special setup which changes a few default values (number of lines per page, carriage returns per record, and first page number). Since labels only contain six or eight lines, the lines per page needs to be changed from 66 to six or eight. Changing carriage returns to 0 causes single spacing. By changing first page number to 0, the pagination and title functions are switched off.

After changing the defaults, formatting my labels was easy. I had to insert a carriage return after each field in the design reports section, and then the printout looked fine.

One last comment about File-It. After setting your format to print, the program allows you to select certain records only. By entering information into a copy of the entry form, you tell the program the parameters of the search. The program then sorts and alphabetizes the records you want to print. The search parameters can be in any or all fields, numerical or character match, greater than, less than, the same as, or not equal to. Wildcards can be used to find partial matches.

Although powerful, searches and sorts are also slow. This is bound to be the case with any program that does searches and sorts on almost a disk's worth of data. It is worth it though, when you only want to print a few records out of many.

Conclusion

There is an important lesson to be learned from this endeavor. There are many good software packages out there. In some cases, like this one, finding the ideal package would have been an exercise in futility. They all work. I could have paid hundreds of dollars for these packages and then found out that the first one, which I got for free, works as well as any.

The point is to show you the differences in the programs and give you some idea of how well they would work for your projects. All have advantages and disadvantages. Some are meant to be used by more experienced computer users. Others are aimed at beginners. Some will work in only limited applications. All are priced differently.

By checking the advertisements for these products, you should be able to find out if the programs will handle the amount of data you need. Check especially the limitations on the number of records the data base can process. Also the time required for sort operations. When working with an especially large data base, it can take 15 minutes to sort and prepare data for printing. If you have a large data base with many records, you may want to buy a more expensive package with greater file capacity. If your business is really growing, you might need to consider whether the program works on a hard disk system.

Shopping for a data base package?

- Minimum and special printer requirements
- # of records per data base (total number of items, e.g. total labels in a mailing list)
- # of fields per record (e.g., name and address are two fields in a record — how many can you have?)
- # of characters per field (e.g., a maximum of 128 characters per field, or less?)
- # of characters per record (all characters including spaces, non-printing telephone number, etc.)
- other considerations or drawbacks

Be sure to note the version number, the minimum RAM (random-access internal memory) requirements, the minimum disk drive requirements, and any screen and printer requirements for each package on your list. For example, even different version numbers of PC-FILE have different limits to these numbers. If you have a 40-column screen version of PC-FILE, you have a smaller number of characters per field and a smaller number of fields per record than an 80 column screen version of PC-FILE. Increased memory (RAM) may let you increase the number of characters per record for PC-FILE.

You have probably decided how much you want to spend, and how you'll get service and training, and you may even have tried a few packages at your local computer store (if they were demonstration versions, be aware that the demos may run faster than the actual program). It's important to "test drive" packages, because they can be very different, as the accompanying column describes.

Before you buy a package for your business, add these questions to your checklist for each package you are considering. Though your first concern may be with user-friendliness, support, or price, the answers to the questions below give you another way to compare packages and will help you decide which package best fits your application.

- Program name and vendor
- Program version #
- Price
- Support, maintenance and training
- Program speed, ease of use, user-friendliness
- Minimum memory (RAM) requirements
- Minimum disk drive requirements
- Minimum screen (display) required

Feature

Portables on Campus

Ozzy and friends help N.C. State faculty and friends.

Richard W. Slatta & Dr. John David Smith

University life — for faculty and students — is very information-intensive. Turning masses of raw information into useful knowledge is what universities are all about. The advantages offered by Osborne computers and other portable micros have made them naturals on campuses across the nation.

North Carolina State University in Raleigh is known for its 1983 NCAA championship basketball team — the Cardiac Kids — who took it all in Albuquerque. But much more is happening at NC State, and portable computers are a big part of the action.

"State" is North Carolina's largest university, with nearly 23,000 full-time students. It is North Carolina's premier technological center of higher education and an integral part of the modern business-education complex that makes up the state's Research Triangle.

Chemists at NC State have discovered chemical molecules that could act as a medium for data storage. When electrical current is applied to these molecules, they function like memory registers. Not surprisingly, then, the faculty and students at NC State are jumping on the portable computer bandwagon. Many are cheering their powerful portables as lustily as they did their beloved "Wolfpack" during roundball season.

How are Wolfpackers putting their portables to work in the classroom, lab, office, and dorm room? Every way imaginable! One vital application is data management. Every discipline on campus generates masses of data, from the esoteric results of scientific experiments (that only a handful of people understand) to reams of prose research notes taken by historians, sociologists, and others.

Electronic File Cards

Until recent times, the 3x5 inch card was the "university standard" for recording research notes. Topped with a subject heading, source code or abbreviation, and completed with a few lines of notes, the 3x5 card served as the organizational tool and memory device for generations of scholars.

After completing a research project and compiling hundreds or even thousands of notecards, the investigator then faced the monumental task of organizing and transcribing the data from 3x5 cards to manuscript pages. Problems inevitably arose — page numbers omitted, cards lost or misfiled, transcription errors occurred during the re-copying the notes.

Portable computers to the rescue! Students and faculty now are packing their computers off to libraries, archives, and field research sites to record research notes in situ.

For historical research, Slatta has been using an Osborne 1 with dBASE II™ software (Ashton-Tate) to record research notes for several projects. dBASE II is a "relational" data base management package that allows the researcher to use the same logic and approach to which s/he is accustomed with the trusty old notecards, but offers immense gains in retrieval and reliability.

Step one of most academic research projects is a search of existing literature to determine what has been written on the topic. Instead of piling up mounds of

citation cards, which never quite get into proper alphabetical order, Slatta now enters bibliographical entries directly into dBASE II files set up for the project. By using ZIP (a utility supplied with dBASE II), a screen is set up complete with instructions, so that research assistants with no knowledge of computers can enter data. Screens are organized with simple instructions and data identifiers so that author, journal title, date, and other vital information is recorded correctly.

In this way, a portable can also serve as a teaching tool. Students can learn more about data base software as they work with the program. A dBASE II add-on called dBCitations provides ready-made screens for data entry and other features very useful for keeping research notes. Another program for the Osborne, "Teaching Is Easy (TIE)," turns the Ozzy into a computer-assisted learning center. Branching, multiple choice exams can be set up onscreen for testing and instruction.

Portables in Archives

After the library search, it's off to a history archive to delve into primary source materials — manuscripts, old reports, diaries, newspapers — you name it and the historian consults it. A database system like dBASE II also provides a convenient means of recording, organizing, and retrieving research notes.

By permitting direct entry of research notes and the subsequent transfer of those notes to WordStar, the portable computer decreases the number of errors generated when long-hand notes are re-copied from notecards to manuscript pages. Rather than re-copying, photocopying, or shuffling around notecards, one simply accesses the same data file for any number of projects.

Smaller portables, such as the TRS-80 Model 100, the Epson Notebook Computer, the NEC PC-8200, or the Hewlett-Packard HP-75, permit more convenient notetaking on site but lack the powerful data manipulation features of the Osborne/dBASE II/WordStar combo.

Faculty members rely on portables for field research, then return to campus and dump the data into a desk computer or feed it via modem into the university's mainframe. In this way, they have the best of the portable's convenience and — well, portability — as well as the added power of larger computers.

Special Education

Universities have paid increasing attention in recent years — thanks to mandates by the federal government — to the special needs of handicapped students and faculty. A wide range of special computers and peripherals have been developed to permit blind, partially sighted, deaf, and otherwise handicapped persons to utilize the power of the computer.

At NC State, Professor Alana Zambone heads a new special education computer lab that brings microcomputer technology to visually impaired students. The lab provides computer access for university students with visual handicaps so that they can compete on more equal terms in an increasingly technological world.

According to Dr. William Ballenger, a School of Education official, computer science offers an excellent career path for blind students because "it is a profession where blindness is an aggravation but not an inhibiting factor." The lab also serves as a training ground for teachers who will go on to instruct visually impaired students.

One of the lab's prize pieces of equipment is an Epson Notebook Computer. Using the Epson with special peripherals, Professor Zambone can bring computer power to clients in their homes — a benefit of tremendous practical and psychological importance. The low cost and convenience of the portable means that some visually handicapped students can purchase such a unit, with peripherals, and greatly enhance his/her communication and information gathering ability on campus.

Telecommunications

Academic research doesn't stop at the confines of the campus. Faculty and graduate students in particular span the globe with their research interests. With travel costs mounting, university scholars are turning to "teleresearching" to stretch research budgets.

The portable computer also permits researchers in the field to connect via modem to major data bases or mainframes. This represents a special benefit to agricultural extension and research personnel who visit North Carolina farmers. They can bring mainframe power out into the field — to tobacco or dairy farms anywhere in the state. Records of agricultural test plot results can be entered directly into the portable and even analyzed with a modem connection to major data bases.

Like all rapidly growing universities, NC State is faced with shortages of vital resources, including computer terminals. With computer literacy the watchword of faculty and students, the demand for mainframe access has far outstripped supply. With a portable computer, modem, communications software, phone line, and computer account, university personnel can access the mainframe from a dorm room, home office, remote research site, or (not recommended) the corner bar. Instead of a midnight foray across campus in search of an open terminal, Wolfpackers settle

The portables revolution, kicked off by the Osborne 1, is changing life for the better for students and faculty.

back in the location of their choice, dial up, and compute.

Bobby Shiels, a junior computer science major from Raleigh, uses his TRS-80 Model 100 for this purpose. By activating the unit's internal 300 baud modem, plugging into a phone jack, and dialing an access number, Bobby uses his Model 100 as a terminal linked to a powerful mainframe. That link also provides Bobby with massive file storage space, access to an on-line word processor called SCRIPT, and many other advantages.

Portable computers are ideal for personal telecommunications. The Commpac modem for the Osborne 1 fits snugly in the left storage slot thereby preserving complete portability with no external peripherals to be lost or forgotten. Slatta uses his Ozzy/Commpac as a terminal tied to the mainframe from a home office.

Increasingly inexpensive and compact modems are making it possible to connect other portables to mainframes, telecomputing services such as The Source and CompuServe, and to local bulletin boards. Telecommunications represents one of the most inviting reasons for the highly mobile academic community to go portable.

Campuses could make a very cost effective computer decision by placing printer and monitor clusters on campus.

Word Processing

Word processing represents yet another, and likely the major, use of portables on campus. Faculty members at NC State, like their colleagues at other campuses, conduct research and prepare innumerable scholarly lectures, papers, and monographs — not to mention to obligatory bureaucratic memos and reports. Many work at home offices and then carry their Osbornes, Kaypros, or other portables to their research site (archives, libraries, court houses), or faculty offices and library studies.

All agree emphatically that portables save them much time and lighten their workloads. Dr. David Gilmartin, who teaches the history of India at NC State, uses a portable to prepare class handouts, tests,and professional papers.

Professor Reginald D. Butler, another historian, write his lectures on the colonial United States with a portable computer using Perfect Writer. He finds that the Perfect Writer software enables him to edit his course materials with ease. Perfect Writer's "yankback" feature allows the recovery and repositioning of paragraphs at will. Items that are changed periodically, such as course syllabi or a curriculum vitae for one's professional dossier, are ideal candidates for word processing power.

Professors agree that word processing has had its greatest impact on scholarly publishing. More and more we've encountered scholars who have abandoned the legal pad and typing paper, not to mention carbon paper and liquid correction fluid, for the CRT.

And why not? With relative ease even the notorious absent-minded professor can recall the basic editing commands of any popular word processing program. These enable the academic to revise drafts quickly — a chore that heretofore required re-typing, cutting and pasting, and seemingly endless proofreading.

Instructors now send material from one chapter of a book manuscript to another simply by entering a few commands. A paper presented at a conference is quickly expanded into a longer version for publication. Split-screen formats permit the editing of two versions of a text simultaneously. Portables have won many converts in academe because of word processing alone, including some skeptics who distrust machines and computer technology as an invidious extension of the Establishment.

NC State students bring few such ideological aversions to word processing. They know that it works and works well! A junior majoring in electrical engineering, for example, uses his portable to prepare term papers, personal letters, and to transcribe and organize class notes taken in long-hand. He admitted that now weeks after a lecture he can read his notes, thus saving valuable time as he prepares for exams.

According to Adam Thomson, an undergraduate and freelance writer, his Osborne 1 is "invaluable" in his course on principles of news and article writing. "I am able," explains Thomson, "to use my WordStar in this course to its maximum advantage by being able to re-edit my material. First, I type in the circumstances of the event we are supposed to write or report on. Later, I am then able to literally 'juggle' around the preprinted copy and 'cut and paste' the story together as I want it on my final copy."

The portable computer, then, has liberated both faculty and students from dependency on secretaries and typing services. And the relatively low cost of portables (often with bundled software) compared with desktop units puts them within the reach of more Wolfpackers.

New Portable Problems

The first wave of portables has hit NC State, and use will grow steadily. Portables have brought power and promise to campus, but they have also created new problems.

One difficulty is the security of hardware and data files. One computer user asked us not to include his name in the article, because he feared that the publicity would make his dorm room an inviting target for theft. To provide data security, he "installed on each disk a password protection program to prevent unauthorized people from booting up the system." Students and faculty alike must face the likelihood of taking out extra insurance coverage on their portables — more vulnerable to theft than larger units.

The size and weight of some portables or transportables (like the Osborne, Kaypro, Zorba, etc.) make it impractical to tote them around campus all day. *(The new Osborne Vixen is much easier to carry and does not compromise a single feature of the older Osborne 1, which is much more bulky — Eds.)* The

need for electrical outlets and extension cords, or an expensive portable power supply, also discourages the student from carrying a transportable to class.

Adam Thomson tried to use his Osborne 1 for notetaking in class but quickly abandoned the idea. According to Adam, "it was difficult to do because the professor talked fast and had a lot of material to cover. After the 2nd class session I gave it up, due to the fact that I can't touch type that fast and secondly I found the Osborne cumbersome to take to class along with a long 3-prong extension cord."

Electronic Crib Sheets

Portables also generate problems for professors on campus. Students can easily access major data bases and download masses of information. That data could then be electronically "pasted" into a term paper without editing, re-keying, or acknowledgment. The danger of electronic plagiarism is thus greatly increased. Students must remember that any information recorded from another source (telecomputing or otherwise) must be acknowledged in notes and bibliography.

Two NC State students who share the use of a Radio Shack TRS-80 Model PC-3 pointed up another potential danger. Gretchen Butler, a chemical engineering and computer science major, and Steve Jenkins, an electrical engineering and computer science major, said that their small computer looked "innocent," much like a calculator. Professors thus allow the use of such equipment for exams, and formulas and data could be stored in memory as an "electronic crib sheet." Of course, this problem doesn't occur with transportables like the Osbornes, which do not resemble calculators.

Professors will have to become better acquainted with the features of portables to determine whether the hardware poses problems during exams. For example, some of Gretchen's math professors ban all calculators and computers during exams, and a physics prof asked that the PC-3 not be used because he recognized that "it could be used to cheat." But, as Steve points out, portables are getting to be "like slide rules used to be." Rules, exam formats, and other elements of campus life will have to expand and adapt to meet the new technology.

Accommodating Portables

Campuses across the country are moving to accommodate their students to the electronic age. Some, like Union College in Lincoln, Nebraska, and Carnegie-Mellon University in Pittsburgh, are facilitating student purchases of microcomputers.

Campuses could make a very cost effective computer decision by placing printer and monitor clusters on campus. Students with portables could then connect them to a dot matrix printer for graphics programs or to letter-quality daisywheel or thimble printers for reports and term papers. Auxiliary monitors would provide relief from the tiny displays on many portables. Telephone lines to individual dorm rooms would make it possible for students to tie into the university's mainframe.

In short, the portables revolution, kicked off by the Osborne 1, is changing life for the better for students and faculty at NC State and other campuses — and will continue to do so for years to come.

Now if someone would just write a program for the basketball team to insure another basketball championship in '85!

Dr. Richard W. Slatta and Dr. John David Smith teach history at North Carolina State University and use portables extensively in their work. Slatta uses an Osborne 1 and Smith a Kaypro IV. Slatta has also written for other magazines, including Link-Up, PC Magazine, Business Software, Business Computing, Family Computing, *and* Collegiate Microcomputer.

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FOG

The **FIRST OSBORNE GROUP (FOG)** has been formed as a User's Group for persons using or interested in portable computers and/or the CP/M disk operating system with related software. In May of 1984, there was nearly 12,000 members from around the world. Most attend local group meetings at over 300 locations.

Computer systems owned or used by members include the Osborne 1 (single and double density), the Osborne Executive 1, all models of the Morrow MicroDecision, the Zorba, all models of the KayPro, several MicroMates, and many more. Special interest groups organized to augment a network of local group meetings include dBase II, Ham radio operators, Personal Pearl.

FOG was started in October of 1981 by a small band of early buyers of the Osborne 1. The primary purpose was to organize a library of public domain software to run on the Osborne 1. A newsletter was quickly started to act as a focal point for the group's activities. The large number of excellent contributions to both the library and the newsletter has produced a library of 200 disks (as of April, 1984) and a nicely typeset (56 or more pages) monthly publication. All back issues of the ***FOGHORN*** are available for a nominal fee which includes shipping in the U.S. Contributions are currently being solicited for bulletin board systems in addition to the three currently in operation. All systems accept both 300 baud and 1200 baud. Phone numbers for existing systems are:

System #1 — Daly City, CA ..... (415) 755-2030
System #2 — Vancouver, BC ..... (604) 596-0314
System #3 — Daly City, CA ..... (415) 992-8542

While the meetings are organized on a local basis, over 100 of these local groups have joined the FOG network, thus increasing the sharing of information, tips, problems and so on. Those local groups which opt to formally join the FOG network receive a portion of local member dues to assist with the cost of maintaining a local copy of the disk library.

The FOG library is currently maintained on the Osborne 1 single density format but separate libraries are being established for the other computer formats. The library files are carefully screened and divided into category types (utilities, games, applications, and computer languages are the four major categories). Programs which contain run or other errors are put into the hacker section so interested members can fix them and resubmit for inclusion in the correct section. Items which do not fit into one of these categories are in the miscellaneous section. A catalog and descriptions of all the discs is maintained in the library section.

Dues in FOG are $24.00 per year. This entitles each member to a copy of the ***FOGHORN*** each month as well as access to the disk library. Local group meetings are open to the public without charge although most restrict access to the library to the membership. The FOG library contains only public domain software. Piracy (the copying of proprietary software) is strongly condemned.

In the United States, the ***FOGHORN*** is normally mailed by non-profit bulk mail. (FOG is a corporation in the state of California and has obtained its non-profit, tax exempt status from both the state and federal governments.) For those members who live out of the country or who prefer first class delivery of their ***FOGHORN***, additional postage must be added to the annual dues. See the chart below for details.

If you are interested in joining a self-help organization to increase you knowledge and the use of your computer, use the application below (or a copy of it). Generally, memberships received at the FOG office prior to the 15th of the month are entered in time to receive the next month's ***FOGHORN***.

If you know of a local group which might be interested in joining the FOG network, please send all details (meeting dates and places, officers, and how interested local computer owners can join). We will send you an information packet on becoming an Affiliated Member Organization.

For your records, the address of FOG is P. O. Box 3474, Daly City, CA, 94015-0474. Please allow at least two months for the arrival of your first ***FOGHORN*** since bulk mail can take as much as nine weeks. (The post office says that it should only take about three week for non-profit bulk mail but some members on the East Coast have experienced longer delays.) A membership card will be processed within a week of the receipt of your dues.

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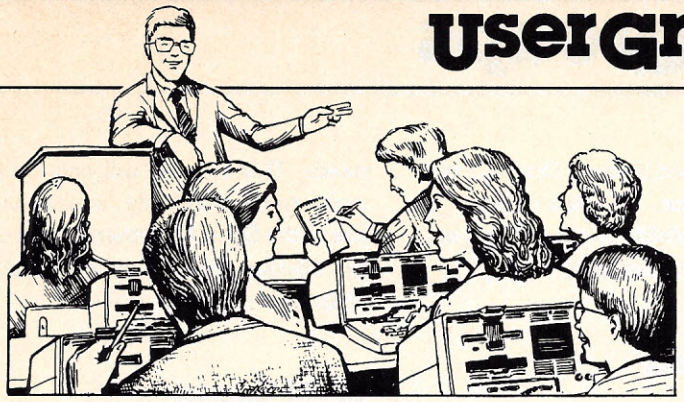

Review of New Drive C: Loader & Archive Programs

Larry Walker

Drive C: came on the market in the summer of 1983 as the answer to the prayer of some of us who were frustrated by the slowness of the Osborne 1 in doing searches in long files, whether in WordStar, dBASE II, SuperCalc or Personal Pearl. Here was a product, we were told, that would look like a disk drive to the Osborne 1 but would act with the speed of random access memory (RAM).

Drive C: was available in two sizes, 192K and 384K. I bought the 384K version because I wanted to load WordStar and Spellguard (with its 50,000 word dictionary) into the Drive C: and still have enough room for writing and editing long documents. (WordStar works best when the maximum document length is no more than one third of the space remaining on the working disk.)

I received my unit in early September 1983 and easily got it up and running. It came with a single floppy disk, which included loading and archiving programs, as well as a 17-page User's Manual.

Much has been written in user group newsletters (some of which has been reprinted in the *Portable Companion* — see April/May 1984 issue, review by Don Kranz, and commenting letters in July 1984 issue) about the inadequacies of the software and the manual. The folks at Drive C: have heard their customers and developed new programs to load the Drive C: and archive and retrieve its contents, and written a substantial user's manual to assist them in making the most of their hardware.

The new software/manual package is being furnished without additional charge to customers who bought their Drive C: units after December 31, 1983. The new package is also available for $39.00 to customers who bought before that date.

This review will be concerned only with the new software and manual and whether they meet their stated goal of making Drive C: easy to use.

For readers who neither own nor have access to a Drive C: unit, a brief description is in order. On the Osborne 1, the unit is mounted in the pocket below the right disk drive. It has two cables emerging from its front panel: the longer one attaches to the IEEE 488 connector on the left side of the Osborne 1, the shorter to the External Video port immediately below the Drive C:. Both of these connectors on the Osborne 1 are duplicated on the panel of the Drive C: so you can connect your Centronics printer cable and shorting plug to it rather than the Osborne 1.

The Drive C: has its own external video jack, so no adapter is needed. In operation, once the Drive C: is loaded (i.e., activated with the loader software), it acts precisely like a third disk drive with the following exceptions: it has no moving parts and thus makes no noise; it works much faster; its memory is volatile, i.e., its contents are lost when power is removed; files to be worked on and programs to be used by Drive C: must be copied into it before it can do any work; you cannot use COPY.COM to copy a disk into Drive C:; when work has been completed, it may be saved to floppy disk for permanent storage.

A number of programs are included in the supplied software. I will quickly summarize these now but explore them further in connection with the review of the manual.

DCL.COM is the Loader program that makes the Drive C: unit accessible. It also allows activation of the print buffer feature. When the buffer is activated, DCL copies DCU.COM, a utility program that controls the use of the buffer, into Drive C:. DCL replaces DRIVEC.COM, the former Loader.

DCA.COM is the Archive-Retrieve program that allows you to save all or any portion of the files contained in the Drive C: unit onto one or more disks and rapidly retrieve them at a later time. This replaces both DCARCH.COM and DCRET.COM.

NOTE:
The original Archiver was called DCARCH.BAS and required the user to load MBASIC before use. This is the version I received; it was *very slow.* It was replaced after a few months with DCARCH.COM, a compiled version of the former program that was a little faster but contained bugs that arose when it was called upon to close files. Thus, some owners stopped using it altogether.

DCQ.COM, DCQINS.COM, DCQ.DAT and DCQAUT.COM constitute the QuickPac package of programs. DCQ.COM is the quick-load program that allows you to store a series of commands in SUBMIT fashion to load Drive C:, name it, copy the contents of a disk (or disks) into it, select a print buffer option, and run a program at the end of the process.

The options chosen for DCQ to run are selected by running DCQINS, a menu-driven Install program, which

saves your choices to disk in the form of an ASCII file called DCQ.DAT. (An initial version of this file is included to get you started. Run the Install program to change any of the options to suit yourself.)

Starting up is made automatic by changing the name of the supplied DCQAUT to AUTOST.COM. A substitute console command processor (CCP), DFD.SPR is designed to make Drive C: work better and is automatically loaded. Finally a print test file, PRN.TST, is included.

The manual runs almost 150 pages, including index, and explains the operation of each of these programs and teaches you how to use them in an integral tutorial section.

Features

The first chapter of the manual previews its contents and sets forth the symbols used throughout. For example, it tries to avoid the confusion that is bound to arise between the name of the unit and the logical name of the drive that has been assigned the name "C" by calling the former "Drive C" and the latter "drive C:". In reading the manual and especially in working through the tutorial, great care should be taken to observe this distinction.

The chapter closes with a brief description of the features of the Drive C: system, which include: higher speed; greater storage capacity; larger maximum file size; ability to designate either of the floppy disk drives or the Drive C: unit as drive A (and to assign "B" or "C" to either of the other two); ability to save the entire contents of the Drive C: unit onto one or more disks and retrieve them quickly from the disk(s) through its Archive-Retrieve program; a print buffer capability that uses either a fixed or variable portion of the Drive C: unit's memory; an automatic rapid-loading system known as "QuickPac"; and the ability to use the Drive C: as a cache buffer/print buffer with a Trantor hard disk, which may be purchased through Drive C: at a discounted price. (I didn't have a Trantor unit available to me so I was unable to review this feature.)

Getting Started

The second chapter presents detailed instructions for mechanical installation of the Drive C: unit in your Osborne 1 and proper hookup of cables as well as trouble-shooting procedures to follow in case the installation does not work as it was supposed to.

It is *very important* that these instructions be followed to the letter (although they are not at all difficult to follow). You are then instructed to prepare a working copy of the Drive C: software disk (the "user disk") and to place the CP/M system tracks on it through the SYSGEN program.

Next comes the printer installation section of the chapter. Some users have had trouble in the past that was traceable to either printer cables that did not meet OCC's specifications or printers such as my Daisywriter 2000 that look "funny" to the Drive C: unit. This section allows you to determine whether your cable is properly wired and explains how to modify it if it is not. The "fix" for using the Daisywriter is either to have the cable disconnected or to have the printer turned ON whenever the Drive C: is in use. (If the printer is connected but OFF, the Loader will not work and the Osborne 1 will crash.)

At the end of the installation procedures, PRN.TST is sent to the printer; it will print a proper test pattern when printer installation is proper. I believe that many cries for help will be averted if the user carefully follows this chapter, step by step.

Methods of Use

The third chapter briefly tells how to use the loader software in QuickPac and/or manual modes to best suit your needs. This chapter will only be meaningful to those already familiar with the use of the Drive C:. Others would be better advised to read it after the sixth chapter.

CP/M Tutorial

The fourth chapter is devoted to a short tutorial on some of the simple CP/M commands and error messages. This is directed at users who have no working knowledge of CP/M's PIP, XDIR, REN, and ERA commands, because these commands are used heavily in the following chapters.

Many users will be able to skip this, but if you are a novice you would be well advised to take the few minutes required to work your way through this chapter.

Drive C: Tutorial

We finally get to the meat of the manual in the fifth and sixth chapters, which take the user, step by step, through all of Drive C:'s features. In the course of this tutorial you prepare a blank floppy "demo disk" and, in conjunction with the "user disk" you prepared in chapter two, learn to use the various CP/M commands and the Drive C: software to: install Drive C: and give it logical name A, B or C; move files into and out of the Drive C: unit (WordStar is used for demonstration purposes); restart use of the Drive C: unit after pressing the reset button (which does *not* destroy the contents of the unit; only turning off the computer does that); erase all files contained in the unit (by using the DCU E command); and use the print buffer and observe it in action (the buffer allows you to use the computer while the buffer drives the printer).

Chapter 5 is a well-presented walkthrough of all of these features. It is a far cry from the three pages of the original manual devoted to the subject matter (although the original software did not provide the user with print buffer capa-

bility, which constitutes half of the content of this chapter).

The new software is much easier to use than the prior version. Where, for example, you had to type `DRIVEC A: C:↵` to activate Drive C: and name it logical A and the left floppy logical C, you now have only to type `DCL A↵`.

Also, you can now rename the Drive C: unit at any time by typing the command `DCN x↵` at the CP/M prompt, where `x` is the new logical name of the Drive C: unit. (The DCN.COM file is automatically generated and loaded into Drive C: when the loader program is run.)

The print buffer software is also loaded at the time the loader program is run. Using the above example, if `DCL A` is followed by any of the numbers, `16, 32, 48, 64, 80, 96, 112,` or `128` in the form `DCL A 16↵`, 16K (or whatever K) of the Drive C:'s memory is set aside as a print buffer and is unavailable as a program processer. Choosing the letter `P` instead of one of those numbers makes available for print buffer service all otherwise unused memory (the dynamic buffer option), in which case, dumping the contents of the buffer into the printer automatically releases this memory space for program processing. Any other number or letter will be ignored and no buffer will be installed.

Finally, the buffer utility program (DCU.COM) is loaded into the Drive C: unit whenever the print buffer is installed. When `DCU↵` is typed, this program presents a menu offering a number of options for controlling the buffer: you can stop and restart the buffer-to-printer dump, clear the buffer, determine the space available for the dynamic buffer, or even cause the files in the Drive C: to be compressed to make greater space available for the dynamic buffer.

It should be noted that none of these controls are likely to be available if you already have a buffer (outboard or built into the printer) between your Osborne 1 and your printer, unless your file is larger than the buffer, because the Drive C: will probably dump its contents into the buffer faster than you can move to give it a command. You might just want to sell your buffer; it would reduce the cost of your Drive C:.

QuickPac Tutorial

This constitutes the first part of the sixth chapter. As mentioned earlier, the QuickPac package of programs is designed to allow the user to start the Loader automatically and copy the de-

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sired files into the Drive C: unit as quickly as possible. There are several ways of doing this, two of them are faster and more automatic than the others.

When running the Install program you are first asked if you want to copy any disks to Drive C:. If you answer `Y`, you are given the option of copying all the files from the left, right or both floppy drives to Drive C:. This copying procedure uses the PIP command, which is a relatively slow file-copying program.

If you answer `N` to the copy question, you can instead automatically retrieve previously archived sets of files from one or two disks. This is done by utilizing the feature that allows you, at the end of the Install procedure, to designate a program to be run. If you designate `DCA R B` ↵ as the desired program, QuickPac will run the Archive-Retrieve program in the Retrieve mode and look to drive B: (the right floppy drive) for the archived disk(s). (The above assumes you have chosen logical drive A: as the name of the Drive C: unit. The DCA command would differ if another name were chosen.)

The retrieve program is *very fast*, copying WSMSGS.OVR, a 34K file, to Drive C: in just 10 seconds. Compare that to PIP, which takes 17 seconds. My set of WordStar/Spellguard related files totaling 272K loads in 115 seconds. Single density owners will find that the process would take a little longer due to the need to change disks twice.

As stated earlier, the Install program asks you a number of questions besides those relating to copying files and running programs. For example, it asks you what logical name you want to give to Drive C:; it asks whether you want to install the print buffer and if so what size; and it asks on which drive you want to store the DCQ.DAT file.

The only question asked by Install that might give trouble is the name of the drive on which you want to store the file DCQ.DAT. Remember, this is the file which stores your answers to all the questions asked by the Install program. The drive you choose should be the one with the Drive C: user's disk, as it is *then* named (at the time you are running the Install program). If you are running the Install program without having first loaded Drive C:, the left floppy is still drive A: and your answer should be `A`.

On the other hand, if you have already loaded Drive C: and are running the Install program to modify your load routine, your user disk is probably not on drive A: anymore. (This assumes that you have named Drive C: something other than `C`.)

If you give the wrong answer, QuickPac will look to the wrong disk for the DCQ.DAT file. If it finds no such file on that disk, it will give you the cryptic error message `DCQ.DAT?`. If it finds a file of that name on the wrong disk, it will doubtless be the wrong version of this file and QuickPac will not do the things you want it to. This error can be a pain to track down, but the manual provides trouble-shooting procedures.

Sometimes when you are working with Drive C: you will need to use your Osborne 1 for another task. As mentioned earlier, you can push the reset button without losing Drive C:'s contents. (For safety's sake, remember to save and back up your work before pushing the button.) When you want to return to your original project, it is a simple matter to insert your user disk and start QuickPac again. If you have been using the copy option, the Loader will not try to copy files that are already contained in Drive C:.

On the other hand, if you have chosen to run DCA to retrieve archived files as part of your QuickPac routine, the DCA program *will* insist on retrieving your files again. A good way to avoid this is to have another "continue" user's disk, which, instead of running `DCA R B` ↵ at the end of the quick-load procedure, runs, for example, a program like `XDIR`.

Archive Tutorial

The rest of the sixth chapter is devoted almost entirely to the archiving to and the retrieving from disk of files stored in Drive C:. The tutorial demonstrates three procedures for saving files to floppy disk: using the "cOpy" command from the WordStar no file menu (similar saving procedures are available in the other applications programs, such as Supercalc and dBase II); using PIP, complete with CP/M "wildcard" designators; and using DCA.COM.

When I am working in WordStar and periodically save my work with a Control-`KD` command, I also back it up to floppy disk using the "cOpy" command. At other times I find the convenience of PIP and its wildcard capabilities to be preferable.

The Archive program is best when the same group of files will be used again and again, because I don't have to copy anything to disk except files that have been changed permanently. (Incidentally, much of the pain of disk-changing with Personal Pearl can be avoided by archiving a set of disks containing all the programs required to add or edit data, produce reports, and sort the data, totaling 256K. Using Drive C: with Pearl speeds up the sorting and report production process substantially.)

Convenience of storage using the Archive program is enhanced by the menu, which allows you quickly to select (and unselect) files to store, display a directory of all files in Drive C:, and list the files already selected for storage.

The program also has built-in safety features to prevent saving files onto disks that are not blank by warning you of this fact and displaying a directory of the files on the disk in question. It then asks you twice whether you really want to erase all those files before starting to store files to that disk.

When archiving, all the files are stored contiguously as one file on the disk. These files are only accessible through the Retrieve program. If you look at a directory of the disk it will show `filename.AR1` only. (You assign the filename by answering the appropriate question on the Archive menu.) If you are loading files that take up more than

one disk of space, the program instructs you when to change disks, and it assigns the second disk the name `filename.AR2`.

I am told by Dave Price, the CEO of Drive C:, that the speed of the retrieval process already commented on is directly attributable to the method of data storage, but he didn't get more specific than that; and it's just as well considering my lack of technical knowledge of computers.

From the above, it may be seen that the Archive-Retrieve program is easy to use and an efficient method of storing files to disk. In my view it is one of the best features of the new software. It stands head and shoulders above the former software.

BackPac

The folks at Drive C: have developed a battery pack that installs within the keyboard enclosure and keeps the memory of the Drive C: unit active for 8-10 hours after the power goes off, deliberately or through power failure. I am told that the manual for this unit is being written and the product will not be released until it is completed. Target price is around $150. I hope to review this product when it is available.

Conclusion

The new software greatly enhances the use of an already fine piece of hardware. It should enable even the tyro to make very good use of the Drive C: RAM-disk. Its developers are to be congratulated. Also, it is important to note that the people at Drive C: are truly dedicated to making the Osborne 1 and Osborne Executive computers more valuable to their owners. The support they give to their customers is, in my experience, unprecedented. In fact, but for this high level of support, the new software/manual might have been available weeks if not months earlier. Drive C: is available from Drive C:, 1690 65th Street, Emeryville, CA 94608.

Larry Walker is a member of East Bay FOG. This article was reprinted from FOGHORN *(First Osborne Group, Daly City, CA), 9/84.*

Commx-Pac: A Smart Terminal Program for Osborne and CP/M Computers

Alan R. Bechtold

Continued on page 62

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Feature

WordStar 3.3's Conditional Expressions

Select records, fields or phrases using new WordStar/MailMerge commands.

Brad Baldwin

Is it possible, using only WordStar/MailMerge, to select from a name and address data file only those corporations that (1) have zip codes from 87654 to 98765, (2) sales of at least $10 million, and (3) are manufacturers of electronic components; and in addition, is it possible to include a special paragraph to those companies located in a specific city?

The answer is yes if you're versed in the ways of WordStar 3.3's new conditional expressions: IF, EX, EF, GOTO, and various mathematical symbols. With conditional expressions, one is no longer committed to printing every record in the Mailmerge data file — individual records may be selected based on any number of criteria. The commands are explained in the manual, but not in detail, and there are several important tricks involved in getting them to work. This article tells how to use them and gives applications for their use.

(Note: Early this year, MicroPro announced as a one time special offer WordStar/MailMerge 3.30 updates priced at $99 to all Osborne 1 registered owners. The offer expired May, 1984.)

Definitions

Conditional expressions contain three main parts: (1) The IF (.IF) or EXCEPT (.EX) statement which sets up the selection, (2) the mathematical symbols further defining the selection, and (3) the GOTO command pointing to the End of File (.EF) command. Let's get the ball rolling by showing how you would type a simple IF statement in a MailMerge file:

```
.IF &STATE& <> ''CA'' GOTO ↵
California residents please
add 6% sales tax. ↵
↵
.EF ↵
Sincerely, ↵
```

Translated, the above example means "If the STATE variable does not equal "CA" (California) then GOTO the next occurrence of the .EF command. If it does equal "CA", then continue on with the next line — in this case, print the message sent to California residents about sales tax." In other words, the tax message is not printed if some other state is found in the STATE entry.

Another way of accomplishing the result of the IF statement above is this:

```
.EX &STATE& = ''CA'' GOTO ↵
California residents add
6% sales tax. ↵
↵
.EF ↵
Sincerely, ↵
```

.EX is the EXCEPT command. Translated: "Except when the STATE equals "CA", GOTO the next occurrence of the .EF command." Once again, all "CA" entries found in the data file's STATE field causes the tax message to print.

So far, only the = and <> symbols have been used in the conditional expression. Those are but two symbols called *comparison characters* that help define the selection process. The complete list looks like this:

```
=    equal to
<=   less than or equal to
<>   not equal to
<    less than
>    greater than
>=   greater than or equal to
```

Options

In the two simple examples shown, GOTO, by operating convention, merely specified searching for the next .EF command in the file. However, it can be made to search for a specific .EF command if labels are used. Here's how:

```
.EX &BUCKS& >= ''15'' GOTO DONALDDUCK ↵
This message is printed when the value
in the BUCKS field equals or exceeds
15. If not, GOTO the EF command with
the DONALDDUCK label. ↵
↵
.IF &CITY& = ''Hayward'' GOTO ↵
Blah de blah... ↵
↵
.EF ↵
Sincerely, ↵
↵
.PA ↵
- - - - - - - - - - - - - - - - - - (page break)
.EF DONALDDUCK ↵
```

The .EX &BUCKS& conditional expression skips over the first occurrence of the .EF command and goes to the .EF DONALDDUCK command found after the page break.

The label is an option not exceeding 20 characters, having no spaces and the first character should not be a number. Thus, valid labels are:

```
END
LABEL1
HELLOTHERE
STARDATE143.45.800
ONE/2,3,4,5#
```

Before completing the conditional expression format, there are two more options to learn: (1) A /B placed after the GOTO causes a backwards search for the .EF command, and (2) a semicolon (;) after that begins a screen comment.

Our first bug — the /B command as checked out on the Osborne Executive release of WordStar does not work. It may or may not have been fixed with the Osborne 1 WS 3.3 update (not available for testing during the research phase of this article), and just possibly MicroPro eliminated it as a feature altogether. Either way, a backward search is not necessary as there are other ways of performing the equivalent function.

Here's the completed format:

```
.IF &DATE& < ''June'' GOTO ABC ;comments ↵
```

This single conditional expression uses all the options. Can you figure out what it does? (Answer: If the DATE field variable taken from the data file is less than "June", then GOTO ABC. The line also has a comment.)

```
.OP
.DF TEST.FIL
.RV NAME,COMPANY,ADDR1,CITY,STATE,ZIP,CODE,SALES
.EX &CODE& = ''E'' GOTO ;searches on code field
.CS
.DM Searching on code &CODE&
.DM &NAME&
.DM &COMPANY&
.DM &ADDR1&
.DM &CITY&, &STATE& &ZIP&

August 7, 1984

Dear &NAME&:

        Blah de blah de blah...

Sincerely,

.PA
- - - - - - - - - - - - - - - - - - - - (page break line)
.EF
```

Figure 1. *Use of the "Except" conditional expression. Only those records with an "E" in the CODE field are selected, all others are skipped over.*

Applications

Code fields can be embedded into the data file for the purpose of printing only those records with those codes. For example, if a company is given a single letter code describing its business, e.g., "P" for publishing, "A" for auto manufacturer, "E" for Electronics manufacturer, "C" for computer consultant, and so on, then it is possible to select those records for printing on the basis of that code. The command file shown in figure 1 prints out letters only to electronics component manufacturers.

The .DM (Display Message) command in figure 1 is a little extra goodie that prints selected records to the screen. By the way, note the positioning of the .EF command. Placing it before the page break wastefully ejects a blank sheet of paper when-

ever records are examined that do not meet selection criteria. Placing it after the .PA command solves that problem, which is the proper technique to use whenever you want letters to go out to some people but not all.

Conditional expressions are easily combined. Figure 2 demonstrates a rather fanciful example of combining expressions to select letters for individuals within a certain zip code range, which in this case represents a political district of some type. Included in the letter is a conditional expression thanking minor or major contributors for their past donations to the party's cause. The data file must also include a field recognizing the person's dollar contribution.

The command file selects records to print when the zip code is between 94345 and 98790 inclusive. All other ZIP field values cause a search for the next data file record. When a record meeting our zip code criteria is located, it prints to the screen (our .DM command) and also begins printing on paper.

One of three messages is selected according to how much the individual donated. A $201+ donation gets the first message, $200 or less gets the second, and zero dollars receives the third. The last paragraph before the closing salutation is not a conditional expression and will always print.

Choose the logical expressions and mathematical symbols carefully. This particular sequence came about to prevent more than one message from printing.

For this article, in order to delineate conditional expressions so they're not visually confusing, a blank line precedes all .EF commands. In an actual command file, blank lines can be eliminated to avoid hard-copy printing. For instance, if the "zero donation" message is selected there will be four blank lines between it and the Dear &NAME&.

Incidentally, do not place .EF commands directly under .EX or .IF commands. Make sure that a carriage return (↵) separates the two.

```
.OP
.DF TEST2.FIL
.RV NAME,COMPANY,ADDR1,CITY,STATE,ZIP,DONATION
.EX &ZIP& )= ''94345'' GOTO END ;search on zip
.EX &ZIP& (= ''98790'' GOTO END ;search on zip
.CS
.DM Now printing a letter to:
.DM &NAME&
.DM &CITY& &ZIP&
July 21, 1984

&NAME&
&COMPANY&
&ADDR1&
&CITY&, &STATE& &ZIP&
Dear &NAME&:

.EX &DONATION& ) ''200'' GOTO ; $201 + contributor
This line prints when contribution exceeds $200.

.EF
.EX &DONATION& (= ''200'' GOTO ; less than $201
.IF &DONATION& = ''0'' GOTO
Thank you for your &DONATION& contribution.

.EF
.EX &DONATION& = ''0'' GOTO ; $0 contributor
Perhaps you're a new member, or perhaps you're a two
fisted tight wad but our records indicate you didn't
contribute a dollar to our party. Get on the ball or
we'll tell your friends in &CITY& what a cheapskate you are.

.EF
Meeting as always at the Dysan building first Thursday
of the month. Looking forward to seeing you there. Bring
your deep pockets.

Sincerely,

.PA
- - - - - - - - - - - - - - - - - - - - - - (page break line)
.EF END
```

Figure 2. *Combining conditional expressions. Searches on ZIPCODE then prints one of three optional sentences based on dollar contribution. Selected records are displayed on the screen and all letters print the closing sentence.*

Variable Selection

It's easy to select records at whim during print time by using WordStar's "Set Variable" command. In figure 3, the Set Variable (.SV) command is changed at just one location. Data is assigned to a variable, in this case FRIEND1, FRIEND2 and FRIEND3. (Set Variables are designed for selecting particular records without using sorting criteria.) Those variables are then plugged into their respective conditional expressions. Figure 3 shows that if NAME = FRIEND1 or FRIEND2 or FRIEND3 then the letter is printed. If not, it goes to the .EF END command where the next record is examined. This file also provides another application of the .IF command.

Perhaps figure 3's usefulness is best explained by comparing it to equivalent WordStar 2.26 procedures. With 2.26, each record is blocked off using ^KB and ^KK, then copied to the beginning of the file (^KC). These steps are repeated for each selected record. Next, you MailMerge the file choosing the appropriate number of pages to print according to how many records were selected. Afterward, the copied records at the beginning of the data file are deleted, restoring the data file to its original condition.

Rather complex, isn't it? However, with version 3.3, records are selected simply by keying in a name after the .SV command and letting conditional expressions do the rest.

Strings

Not yet mentioned is ASCII's hierarchical sequencing order as shown below:

0123456789ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefg... (etc.)

In other words, both alpha and numerical strings may be sequenced. For example, the following expression prints out all the companies from "Digital" to "MicroPro:"

```
.EX &COMPANY& )= ''Digital'' GOTO ↵
↵
.EX &WORD& (= ''MicroPro'' GOTO ↵
↵
Message blah blah... ↵
.PA ↵
- - - - - - - - - - - - - - - - - - (page break)
.EF ↵
```

If our intention was to print out all companies from D to M, then use the following:

```
.EX &COMPANY& )= ''D'' GOTO ↵
↵
.EX &COMPANY& ( ''N'' GOTO ↵
↵
(etc.)
```

```
.OP
.DF TEST.FIL
.RV NAME,ADDR1,CITY,STATE,ZIP
.SV FRIEND1,Casper the Ghost
.SV FRIEND2,Morris the Cat
.SV FRIEND3,Billy the Kid
.IF &NAME& = ''&FRIEND1&'' GOTO LETTER
.IF &NAME& = ''&FRIEND2&'' GOTO LETTER
.IF &NAME& = ''&FRIEND3&'' GOTO LETTER
.IF &NAME& () ''&FRIEND1&'' GOTO END

.EF LETTER
July 21, 1984

Dear &NAME&:

        Blah de blah...

Sincerely,

.PA
- - - - - - - - - - - - - - - - - - - - - - (page break line)
.EF END
```

Figure 3. *Variable selection using the "Set Variable" command. Prints only those records (Casper, Morris and Billy) specified by the Set Variable command without going through sorting criteria.*

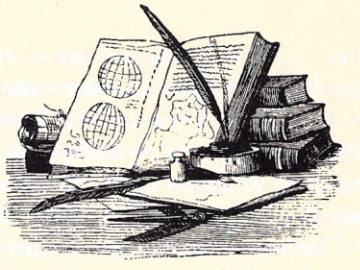
Sample data file:

```
1 July 10,We CU,1984 Orwell St.,Big Brother,225000,6,3100,''A,C,F''
2 August 20,Red Carpet,Jaws St. Apt 3D.,Sequel,300000,7,3300,NO
3 August 15,Parker Bros,1 Boardwalk Ave,Atlantic City,1000,24,52000,''A,C''
```

Command file:

```
.OP
.MT0
.MB0
.PL11
.DF ESTATE.FIL
.RV DATE,SELLER,ADDR1,CITY,PRICE,ROOMS,SQFT,FINANCE
.EX &PRICE& )= ''150000'' GOTO NEXT
.EX &PRICE& (= ''250000'' GOTO NEXT
.EX &SQFT& ) ''1800'' GOTO NEXT
.IF &FINANCE& ='NO'' GOTO NEXT
Property offered by &SELLER&.
Placed on market &DATE&
Located: &ADDR1&, &CITY&
Price: &PRICE&
SQFT: &SQFT&
Rooms: &ROOMS&
Financing: &FINANCE&
A = Assumable          C = Conventional
F = FHA                V = VA
.PA
- - - - - - - - - - - - - - - - - - - - - - (page break line)
.EF NEXT
```

Figure 4. *Simple real estate application.*



Real Estate Application

Conditional expressions need not be used solely with correspondence applications. Figure 4 shows an application that looks at a simple real estate data file and extracts the necessary properties based on selection criteria of price, square footage and financing. Eliminating the top and bottom margins and setting the page length to 11 creates a data sheet with six properties per page. Perusing the data file and command file, which records will be selected? (Just the first one. It fits the criteria of price, square footage and financing.)

Although everyone was anxious for WordStar 3.3's column block move command, I feel the lesser known conditional expressions are just as valuable. They are not as powerful as commands associated with data base management software, but WordStar/MailMerge was not designed to be a data base management system. However, the conditional expressions are fun to use and they work rather nicely with WordStar files.

Feature

Arrange WordStar Text With SORT

Using a public domain utility to select and arrange paragraphs within a WordStar text file.

Richard Drakeford

I draft text files — letters, notes, articles — at high speed. If I am working extemporaneously, I enter material in the order it pops into my mind. If I am researching, I enter raw notes in the order in which I come across pertinent facts. During text entry, I don't slow down to bother much about the final order of presentation which is bound to be somewhat different than the order of entry. This is a common practice when drafting.

WordStar's facilities for re-arranging draft text are cumbersome block moves. Blocks must be marked and the cursor must be positioned at the desired new location. Improvements can be made by doctoring up special function keys to move blocks around to temporary place markers. For a year or so, that was my main method of re-ordering draft text. I would hit Control-1 and a block of text would be moved to place marker ‹1›, hit Control-2 and a block would jump to place marker ‹2›.

I also experimented with the use of MailMerge to grab short notes (configured as data variables) and print them to a new disk file in a new order and in fact wrote a *Portable Companion* article about that method (*"Sorting Notes With MailMerge", Feb/Mar 1983*). Another stunt is to configure text paragraphs as MBASIC comment lines, number them in a desired order, load them as a BASIC program and save the program as an ASCII file. (When program lines are loaded, MBASIC puts them in numeric order.)

A Faster Way to Sort

After all this floundering around, it turns out that the quickest way to re-order WordStar text paragraphs is to use a dandy little 2K utility called SORT.COM. This is a public domain (free!) assembly language gem and can be found in the FOG disk library on disk -FOG/UTL.005. (Don't confuse this little 2K SORT.COM with an 11K program of the same name found on FOG/UTL.028 — about that one I know nothing.)

SORT.COM sorts out files line by line and puts them into hexadecimal order. Fortunately SORT.COM defines a line as ending with an ASCII carriage return (0D hex). This means that a line ending with a WordStar soft carriage return (8D hex) is *not* seen as a line for sorting purposes. In other words, SORT.COM regards a whole WordStar document paragraph as one line, just the ticket for sorting out notes.

In fact, when used as an adjunct to WordStar SORT.COM is a powerful tool for the selection and arrangement of text paragraphs. No programming is required — just the application of simple technique and ingenuity.

Try it Out

For a first practice test of using SORT.COM to re-order text, open a file called TEST1 and read into it any handy document file which has regular reformable WordStar paragraphs with only the last line ending with a "hard" carriage return. Number the first nine paragraphs in the order "9,8,7,..." placing the numbers in the first column of the first line of each paragraph

(flush with the left side of the screen). Save the file (^KD). Type R at WordStar's opening menu (editing no file) and give the command:

```
A:SORT B:TEST1 B:TEST2↵
```

(This assumes that SORT.COM is on drive A and your files are on drive B.) When sorting is done, return to WordStar and inspect file TEST2. You should find the first nine paragraphs at the top of the file in the order "1,2,3...etc." If you had other paragraphs in there, they will be in some kind of alphabetical order following along behind the numbered paragraphs.

You may well notice some other changes in your file. If your paragraphs originally had blank lines between them, those blank lines (which consist of only carriage return/line feed control characters) will all be sorted to the top of the file! Not to worry, you can take care of that undesirable feature by using a simple technique to prepare a file for sorting.

The main thing you should observe when first running SORT.COM to rearrange a text file is that sorting text is fast! Here are some sample timings measured from the time you hit the return key after entering the SORT command line until you are prompted to hit any key to return to WordStar:

- To sort a 4K file consisting of 16 paragraphs, 12 seconds.
- To sort a 16K file of 64 paragraphs, 27 seconds.
- To sort a 32K file of 128 paragraphs, 72 seconds.

The algorithm used for sorting may be some kind of "bubble sort" since the time required to sort a large file more than doubles when the size of the file is doubled. However it is fast enough and the price is right. Undoubtedly the time consuming part of the operation will be the time required for the human operator to decide what order is desired and to designate the paragraph order. In comparison, the actual sorting time is negligible.

SORT.COM works on any size file which will fit in memory. If the file is too big for sorting, you will be queued and will have to split the file up for manipulation. However, very large files can be sorted. I have successfully sorted a 40K file which is plenty large enough for this utility to be extremely useful.

Let's look more closely at how SORT.COM operates. The algorithm used for sorting goes by the hexadecimal order of a "line" character by character. If numbers are involved, all lines beginning with 3 will be placed before all lines beginning with 5. 362 will fall before 51, for example. By referring to an ASCII table you will see that all upper case letters precede all lower case letters, so the capital "Z" will sort in front of the small "a" or "b".

Non-printing control characters in the ASCII set will also be sorted. If a "line" has just a carriage return and line feed on it, that line jumps before all lines beginning with a number or letter — as you may have discovered during testing. Also, lines which begin with spaces will sort in front of unindented lines. And the more leading spaces, the higher in the sorted file the paragraph will appear. Better to keep draft text unindented and do indentation formatting after sorting.

Preparing Text for SORT.COM

Here is a technique to use in preparing a file to be sorted. Because the carriage return character (0D hex) sorts in front of all numbers and letters, blank lines will sort in front of any text paragraph whether numbered or not. In fact, as stated previously, all blank lines will end up collected at the top of the sorted file. If you like to keep blank lines between paragraphs in draft files, as I do, they will disappear.

Here's what you do: to prepare for sorting use a find and replace operation (^QA) to find all double carriage returns at the end of paragraphs (FIND?^N^N↵). Augment them with some kind of marker for the end of a paragraph, such as two dollar signs ($$):

REPLACE WITH?$$^N^N↵ OPTIONS?gn↵.

After sorting, it is a simple matter to do a global find and replace to convert those $$ markers to a blank line again. This little operation of tagging paragraph ends and later removing the tags is a cheap price to pay for the benefits obtainable by using SORT.COM and WordStar in conjunction.

Details of the Operation

Here is a step-by-step set of instructions for sorting out a batch of notes or draft text:

1. Enter your notes as WordStar paragraphs, with two strikes of the Return key at the end of every paragraph. Operate with word wrap on, justification and hyphen help and soft hyphen entry off. Add notes to the bottom of your file until the cumulative draft is ready for re-ordering. Maybe you'll collect stuff over a period of weeks, over a whole school term, for example.

2. Prepare for sorting as follows: First tag the end of all paragraphs with $$ (using the search and replace operation described above). Then run through and number each paragraph according to desired order. Do this by putting the cursor at the front end of the paragraph and inserting the number, making sure that WordStar's insert mode is on. If you run out of numbers you can switch to capital letters as order designators, then lower case letters.

3. Save the numbered and tagged file with a ^KD. At the top WordStar menu, type R to run SORT.COM and enter a valid command line using the following syntax:

```
SORT oldfile.ext newfile.ext↵
```

In this example oldfile.ext is the name of the file to be sorted and newfile.ext is the name of the file after sorting. You end up with both the new file and the old file. Disk drive designations may be used in front of the file name if desired:

```
A:SORT B:OLDFILE B:NEWFILE↵
```

Be careful about drive designators if SORT.COM itself is not

on the default drive but the file to be sorted is. (I make it a practice to keep SORT.COM on my regular WordStar disk, and usually log over to drive B so that the files I am working on are on the default drive but SORT.COM isn't.)

4. After an amazingly quick operation, enter the sorted output file for editing (WordStar D command from editing no-file menu) and restore to a neater text configuration. You will find that all the blank lines have been sorted to the top of the file and that there are no blank lines between paragraphs.

Delete the block of blank lines at the front (using ^KB, ^KK, and then ^KY). Do a "find and replace" as described above, finding $$ tags at the paragraph ends and replacing them with ^N^N to make a blank line at the end of each paragraph:

```
^QA
  Find?$$^N↵   Replace with?^N^N↵   Options?gn↵
```

One major problem to watch out for is paragraphs in your original file which have an inadvertent hard carriage return on some intermediate line. SORT.COM will treat that batch of text as two "lines." They will be separated and the second part will end up in a location according to its alphabetic order. Such paragraphs are easily discovered if you run through your original file by doing repetitive ^B commands and observing where the cursor stops. It should never stop in the middle of a paragraph you want SORT.COM to operate on as a though it is a single line.

Actual Applications

Now that you know how to run SORT.COM in conjunction with WordStar text, here are some ideas on using the technique to accomplish useful tasks.

Select and Arrange Boilerplate Text

One application for SORT.COM of almost universal utility is for handling routine correspondence by the selection and ordering of text paragraphs from a stockpile file of boilerplates. Say you have a stockpile file of 30 or 40 paragraphs, five or six openings, several closings in varying degree of courtesy, etc.

Open a new file called LETTER, read in your stockpile file (^KR), browse through it and number in order only those few paragraphs you want use on this occasion. Just leave the other paragraphs unnumbered. Save LETTER (^KD). Then type R and give the command:

```
SORT LETTER LETTER2↵
```

Afterwards, enter LETTER2 for editing. You will find your numbered paragraphs at the top of the file in order. Delete everything below (^KB^QC^KK^KY will do the job nicely) and tidy up the selected text. By this nifty strategy you use SORT.COM to extract selected paragraphs from a large stockpile and put them in order.

If you are using this method to select and order boilerplates, you will probably want to have your original stockpile file configured with a tag at the end of each paragraph. This will mean that you are always prepared for re-formatting the text at the final stage.

Arrange Topical Notes

Another way you can use the SORT.COM/WordStar combination is to arrange accumulated notes in some logical order. You will recall that sorting is accomplished character by character. Thus 111 sorts in front of 23. This fact lends itself nicely to a scheme of numbering paragraphs based on the Dewey decimal system. I find it convenient to order notes in a subject file by inventing an ad hoc numbering system based on logical classifications within each file. Then I can run through a file and insert numbers at paragraph beginnings based first on general order, later on more specific order.

For example, on the first runthrough you might number paragraphs either 1, 2, 3, or 4 with several paragraphs bearing the same number depending on which logical "section" they fall into. Also prepare the file by tagging paragraph ends. When SORT.COM is run, all the paragraphs designated with 1 will group together, all the 2's together, and so forth.

On a second runthrough, more specific numbers can be used to add a second level of classification to your notes: the 1's can be designated 11, 13, 15, 12, 14, for example. (And will re-sort in order 11, 12, 13,...) Make sure paragraph ends are tagged and save the file, then re-sort.

If a finer logical classification is required, a third digit may be added. And even though I use rough logical schemes for numbering on an ad hoc basis, there is nothing to preclude librarians or other knowledge workers from using numbers based on the actual classifications of the universal decimal system.

Once you are familiar with the mechanics of SORT.COM, you will find that the most difficult thing about re-ordering text will be the decisions you personally have to make about where a paragraph stands in logical relation to the rest of the material. Classifying and integrating complex facts expressed in textual form is damn near the whole ball game in literate thinking, and thinking itself can be hard work. Luckily for me re-sorting makes recovery from logical mistakes real easy. When the light finally hits me as to what is the natural sequential structure of facts in a field I am tracking and keeping notes on, I easily re-order my notes.

Writing for Presentation

Another occasion for re-ordering text is when you write something for publication. Then the order of presentation may not be entirely logical. You may want to bring an interesting example or anecdote to the fore as a lead before getting into a chronological or logical narrative sequence. The difference has been described as the difference between warehousing facts (logical arrangement) and showrooming facts (interesting arrangement). Copying logical notes and renumbering to select and re-arrange material is a quick way to a first draft.

On the Soapbox

SORT.COM is another fine example of the public domain utilities available in the FOG library. Unfortunately, my copy does not have authorship information on it. Probably it was worked on by several people, each of whom donated his labor for the public good, and each of whom deserves the thanks of all users for the development of this valuable text-sorting tool. Whoever the authors are, I would like to give my thanks here. My uses of SORT.COM so far just scratch the surface, and undoubtedly the combined thought of other users will devise more neat ways to manipulate text.

There are expensive programs (called "idea processors" and "outline processors") on the market now which do some of the same things as SORT.COM. Perhaps those costly packages are easier to manipulate and will re-arrange your text and outlines with more specific commands. Great! Great if you got the bucks for that kind of thing.

The free utility program SORT.COM was probably not designed to manipulate text paragraphs. However, it is no sin to mix paint with a screwdriver if that tool is handy to do the job. The combination of WordStar, SORT.COM and the user's own ingenuity amounts to a "poor man's idea processor." This is the kind of guerrilla programming which puts computing power in the hands of everyday people at affordable prices. And is why we should all support organizations like FOG which promote the free interchange of information.

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John Gaudio is an electrical engineer holding two U.S. Patents on computer systems. He's been a consultant to OCC and has written several articles for their magazine. The Portable Companion. He continues to write regularly for the newsletters of the First Osborne Group and the Denver Osborne Group, and has spent the last two years helping people to get more from their Osborne Computers.

Letters from page 4

would receive the first two issues free — a small consolation as I had just renewed prior to *The Portable Companion* being drawn into Osborne's black hole. I promptly re-subscribed, although I must say I find the price rather steep (about $1^1/_2$ times the cover price for Canadian subscribers — and twice the previous price). I am glad to see both OCC and the magazine out of the black hole.

The Portable Companion is the only magazine I read regularly from cover to cover. I appreciate the fact that it concentrates on using the computer rather than on buying either hardware or software. Each issue usually has one real gem of information, often something small like the Wizard's (Brad Baldwin) answer to a question on the effect of the 80 column upgrade on dBASE II which solved a big problem for me.

However one thing perplexes me. My mailing cover indicates an Oct-84 expiration date. With bi-monthly publication and excluding the first two free issues my expiration date should be July-85. I hope this can be corrected as I am a loyal subscriber and supporterof OCC but I do not want anymore of my money drawn into a black hole.

Richard W. Woodley
Kanata, Ont. Canada

The labels used to mail the first two issues of the new PC *(April/May and July 1984) were from an old mailing list that hadn't changed since September of 1983. Disregard it totally. A new mailing list is now being generated from scratch as new subscribers send in their orders. Thanks for your patience.*

Attitude Problem?

I must take exception to your comments to Mr. Bonds Shands Jr's letter in the June/July issue of *The Portable Companion*.

Since the reorganization of the Osborne Computer Corporation and the resurrection of *The Portable Companion*, you have commented several times concerning support of the company. What you seem to forget is that we are not dealing with a professional sports team where we could root for the success of the home team. Osborne and *The Portable Companion* are a business; a business that, through mismanagement, has gone bankrupt and we, as owners of the company's product, have taken a loss. Be it a service contract, lack of a P-system, or a subscription to this publication we have lost something. If an owner was a part of a user group or hadn't gone through the painful and frustrating task of filing for the recovery of monies in bankruptcy court one would not know that some monies could be recovered. Where were our friends at Osborne to give us this information? They sure knew where to find us to advertise a "back in business." This is the company you wish to support.

Why must I "risk" my hard-earned money on someone else's business venture. I wonder how long my company would stay in business if my literature or contracts stated that the customer must be willing to "risk their money" in order to use my services. With this attitude I would be out of business faster than you could push the reset button.

I do not consider myself a "fan" of General Motors just because I purchased one of their products; nor will I consider myself a "fan" of the Osborne Computer Corporation just because I purchased one of their computers. I will also not permit a magazine that is owned by the same corporation use guilt to attempt to make me feel obligated to patronize its products.

There is no question in my mind that the Osborne 1 is a superior machine; and that the company will begin to manufacture hardware of similar quality. However, this attitude problem which the publishing arm of the corporation has is going to have to change. Between FOG's newsletter (*FOGHORN*) and Kaypro's monthly publication, *Profiles* (published monthly for a subscription price of $25.00 per year) I can do just fine without *The Portable Companion* at a ludicrous price of $5.00 per quarterly issue.

Seeing that I am not going to see your publication again I would appreciate it if you would answer this letter via US mail.

Randy Feldman
Port Washington NY

We are not responsible for the demise of the original Portable Companion, *nor are we responsible for the bankruptcy of OCC. Neither are we the "publishing arm" of OCC — see the Wrap Up section for details on this arrangement.*

However, we see nothing wrong with "rooting" for OCC as if it were the home sports team — as Osborne computer owners, we'd rather own Osbornes than IBM PCs. Sports teams are motivated by profit, and the bottom line for a sports team is not how supportive the crowd is, but how many tickets are sold. If you want the team to stay in your city, you will pay to watch the team play next year, whether they win or lose this year.

We edit The Portable Companion *for the simple reason that we own Osborne computers and we want the company to stay alive and support the product. The celebrated "industry shakeout" stories only help the behemoths (IBM, etc.) maintain their control over the industry. We would like to see a different ending to these stories.*

As for our response to Mr. Bond Shands' letter (July 1984 issue), our statement was: "readers who find the magazine useful must be willing to risk their dollars if they want to see such a magazine survive." This magazine, which is not sold on newsstands or in stores, relies solely on subscription and advertising income. There is no other source of revenues to publish it.

OCC is continuing to publish a CP/M-oriented magazine when many others have failed. You take a small risk whenever you pay for a subscription to a special-interest magazine. Even big publishers like Ziff-Davis might fold a magazine, without going bankrupt as OCC did (as with Microsystems*).*

However, OCC feels compelled to provide support to all users of Osborne computers by paying outright to publish this magazine until it can pay its own way, which could take several years. For this, OCC should be commended. If the magazine survives, the risk will have been worth it. In any case, the former subscribers have received something for the money they spent in 1983. Would it have been better to do nothing?

As for the statement, "where were our friends at Osborne to give us this information (about filing claims against

Continued on page 56

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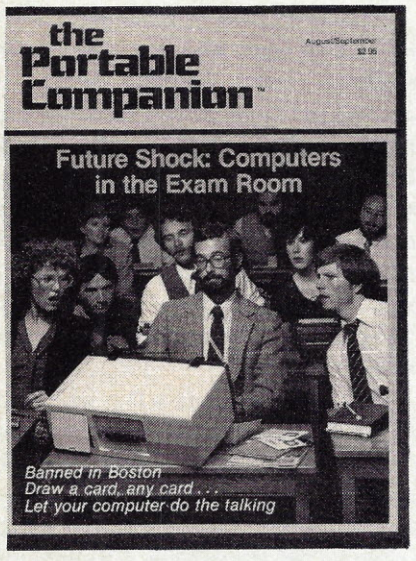

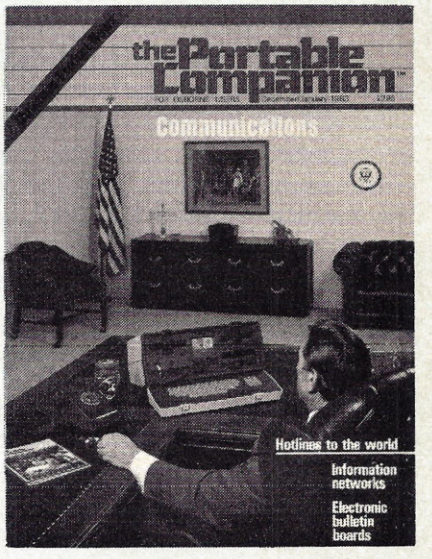

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OCC)," most of them were starting new jobs. The four people who stayed behind worked many months to produce several reorganization plans for the court. There was plenty of publicity, and as Gale Rhoades of FOG will tell you (if you ask), the reorganization team cooperated fully with FOG to publicize the information.

As for the Kaypro-subsidized Profiles, *though we have been registered Kaypro owners for two years, we received no offer to subscribe to* Profiles. *We have seen issues, and the magazine does not provide coverage of Osborne computers.*

Recovering dBASE II Files

In regard to John Gaudio's "Recovering Damaged dBASE II files" in the dBASICS column of June/July issue of *The Portable Companion*, although what he prescribes works, I believe that most of it can be omitted and what remains reduced to two easy steps. Using John's example, in which the file with the incorrect record count is LIST.DBF, I do the following:

```
.USE LIST ↵
.COPY TO FIX ↵
```

The new file FIX.DBF will be identical to LIST.DBF except that the record count in bytes two and three of the header of FIX will be correct. Once I've satisfied myself that is so by saying `LIST FILE ↵` (this displays the record counts in the headers rather than the actual counts of records), I then say:

```
.USE ↵
.RENAME LIST TO LIST.BAD ↵
```

(So as not to burn my bridges.)

```
.RENAME FIX TO LIST ↵
```

Later, when I have worked with the fixed version of LIST and have seen that it's all there in good condition, I say:

```
.DELETE FILE LIST.BAD ↵
```

I think the reason this method works is that in copying an entire file — or for that matter appending too — dBASE II doesn't refer to the record count. (Indeed it can't refer to it because even in the simplest case deleted records are not copied and, therefore, the number of records copied may be less than the record count in the header of the old file.) Instead it copies until it encounters the end of file mark and then installs in the header of the new file the actual count of the records copied. For this reason changing the record count in the old file is not relevant.

Also, as far as I can tell, John's prescription for copying:

```
.USE LIST ↵
.COPY STRUCTURE TO FIX ↵
.USE FIX ↵
.APPEND FROM LIST ↵
```

is entirely equivalent to:

```
.USE LIST ↵
.COPY TO FIX ↵
.USE FIX ↵
```

I hope this will make life easier for dBASE II users.

Dave Brast
Point Reyes Station, CA

Reach Out and Patch WordStar

The University purchased an Osborne 1 for us to use in our office as well as for demonstrations in the Business Outreach word processing classes offered as short-term adult continuing education. My secretary and I are the principal users. It's the greatest thing since twist-out ice cube trays.

We use an Apple dot matrix printer with the Ozzie (it has an 80-character screen upgrade) and are in the market for an electronic typewriter to use for correspondence. Thanks to the help of articles in *The Portable Companion* I have managed to install patches on my Wordstar disk that:

(1) change the Help level to 2,
(2) turn the insert mode off,
(3) turn off the help message display,
(4) set the top margin to 0 and bottom margin to 6,
(5) set right margin minus 1 to 40 (re: 80-upgrade),
(6) set page offset to 0,
(7) turn justification off initially,
(8) set PALT: to elite,
(9) set PSTD: to pica,
(10) set RIBBON: to toggle on elongated characters,
(11) set RIBOFF: to toggle elongated characters off, and
(12) set WID: to 54 (re: 80-upgrade).

In installing these patches I have goofed up often, including the time that I somehow had the arrows keys bringing up help menu displays, the time that I couldn't move the cursor with ^Q commands, the time that page numbers were turned off altogether, ad infinitum. After struggling through the installation hex addresses for what seemed like an eternity, I finally gave up and started all over again.

I really shudder to think about starting all over again with that hellacious installation routine and run the risk of goofing up more of the features. Not having a complete list of the Wordstar labels or addresses, I really can't figure what I might have also changed that is causing the problems I am having now. A minor thing that is bugging me now is that my page number is no longer centered at the bottom of the page every time.

The major problem is that when I try to use the R selection from the Wordstar menu (to check the space left on my B-drive disk with XDIR), I get the message `File WX.COM Not Found – Can't run a program unless WX.COM is available.` I have to exit from Wordstar, enter `A:XDIR:B ↵` to get the directory of B, then enter `A:WS` to continue editing. When I run STAT on the Wordstar disk it shows the following files:

AUTOST.COM	2K
MERGPRIN.OVR	8K
WS.COM	14K
WSMSGS.OVR	26K
WSOVLY.OVR	28K
XDIR.COM	4K

The computer store that sold us the Ozzie is no help. Can you please tell me what the heck I have done wrong and how to fix it?

Continued on page 60

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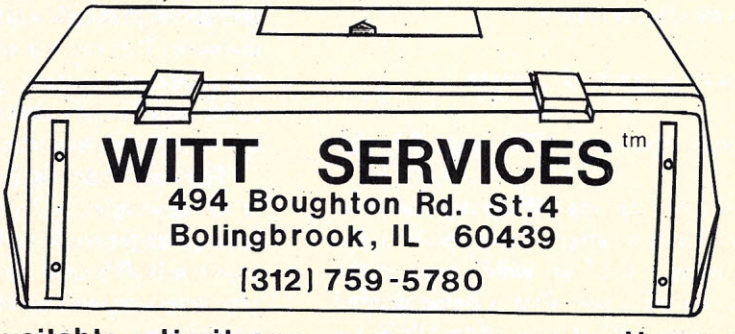

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Tech Tips

Using the Printer From MBASIC

Use this MBASIC technique to "toggle" your printer on and off from a program.

Dan McCauley

MBASIC has the sometimes annoying "un- feature" of requiring that the programmer specify where output is to be directed from within the program. That is, you have to use the PRINT statement to send output to the console, or the LPRINT statement to send output to the printer. If we want a printed listing of the results of a program we must go into the program and change each PRINT to LPRINT.

One possible way around this is to change CP/M's IOBYTE at memory location 3H (hexadecimal) from within our BASIC program. This byte is used by CP/M to assign physical devices to the four logical devices that CP/M recognizes. The console field of this byte is the rightmost two bits. By changing these two bits, all output will be directed to the printer instead of the screen. So, the following BASIC statements could be used to direct output to the printer:

```
POKE 3,1     :' for a serial printer

POKE 3,2     :' for a parallel printer

POKE 3,128   :' to return output to the console
```

(See *The Portable Companion*, June 1983, page 20; also Oct. 1983, page 53.)

This method has several disadvantages. While the device assignment enabling the printer is in effect, the console is disabled, so we can't type in input until we switch back to the original assignment. Also, we can't see what is being printed since it is not echoed on the screen. What we would really like is a true "echo" function like the Control-P command in CP/M — everything that comes out on the screen, also comes out on the printer in exactly the same way.

To figure out how to do this, it is instructive to first look at why Control-P doesn't work in MBASIC. The reason is that MBASIC doesn't use the standard BDOS function calls of CP/M. Instead, it uses the BIOS routines directly, finding the address of the BIOS jump table in memory locations 1H and 2H. (This address is of the second entry in the jump table, the warm start vector, in all versions of CP/M, and other BIOS function locations are calculated relative to this address by MBASIC.)

It is the BDOS routine in CP/M that checks to see if the printer has been toggled. It does this by checking the value at BDOS+307H to see if it is zero or non-zero. This whole procedure is by-passed by MBASIC, however.

The way out of this problem is shown in the TOGGLE program accompanying this article. The instruction in the jump table to jump to the console-out routine is replaced with an RST instruction that calls a little routine we placed in "page zero" of memory. This routine saves the character to be output, calls the printer-out routine, gets the character back, and then goes to the console-out routine where it was originally headed before it was so rudely interrupted.

The accompanying BASIC program called TOGGLE is really an assembled-by-hand assembly language program. This method might work with other common programs which bypass the BDOS calls, provided they don't use the area in page zero where our routine is placed. Otherwise we'll have to find a place for it.

Continued on page 60

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```
10 '*********************************************
20 '*          T O G G L E
30 '* a program to toggle the printer in MBASIC
40 '* by changing the BIOS jump table of CP/M
50 '*********************************************
60 '
70 '
80 WMSTART=PEEK(1)+PEEK(2)*256
85 ' get addr of 2nd entry in BIOS jump table
90 '
100 CONOUT=WMSTART+9
105 ' addr of console out jump table entry
107 '
110 CONBYTE1=PEEK(CONOUT+1)
120 CONBYTE2=PEEK(CONOUT+2)
130 '
140 LPTOUT=WMSTART+12
150 LPTBYTE1=PEEK(LPTOUT+1)
160 LPTBYTE2=PEEK(LPTOUT+2)
170 '
180 POKE CONOUT,&HC3:' turn off printer if it's on
190 '
200 PRINT "turn printer on or off (1/0) ?"
210 CH$=INPUT$(1)
220 IF CH$<>"1" THEN 380
230 '
240 '   BASIC               8080 assembly language
250 '-----------------------------------------
260 POKE &H10,&HC5:'      push  b       ;save char.
270 POKE &H11,&HCD:'      call  lptout  ;call printer
280 POKE &H12,LPTBYTE1:'                ;  routine
290 POKE &H13,LPTBYTE2
300 POKE &H14,&HC1:'      pop   b       ;get char.
310 POKE &H15,&HE1:'      pop   h       ;
315 '           ;get rid of old RET addr pushed w/ RST
320 POKE &H16,&HC3:'    jmp   conio     ;jmp to addr orig.
330 POKE &H17,CONBYTE1:'                ;in the jump table
340 POKE &H18,CONBYTE2
350 '
360 POKE &HE50C,&HD7:'      rst 2
370 '
380 END
```

Letters from page 56

Linda Shock
Business Outreach Office
Southeast Missouri State University
Cape Girardeau, MO

We don't know if our answer is correct for your problem, but we know that the R *menu option causes WordStar to look for the ".COM" file you installed, and it searches for the filename you used during the installation process (usually WS.COM, but it could be any name you specify during installation). WordStar will not find "itself" (its ".COM" file) if you renamed the file using any rename utility or the built-in REN command. To rename WS.COM, you must go through the process of installing it and selecting a new name.*

Note that addresses differ in different WordStar versions. See the Wizard's article in this issue, which presents the entire list of WordStar labels and addresses for the two WordStar versions available with Osborne computers.

Reverse Video

I was immediately seized with interest when I read Thom Hogan's article, "Reverse Video and a Faster Serial Port," in the June/July, 1984 issue of *The Portable Companion*. having a reverse video block cursor instead of an underline seemed very sensible; and Hogan's piece made it seem like an easily-attainable goal. I found a 74LS86 chip, some wire-wrap wire; and I was ready to effect a nifty, useful improvement to my Osborne 1.

Upon removing the case, I quickly realized that I had a notable problem — my machine had factory-installed 80-plus column and double-density modifications; and the large "piggy-back" circuit board was resolutely in the way of access to the area where the reverse video surgery had to be done. Feeling that too much was at stake in proceeding further, I sadly re-assembled the case in the knowledge that I could manage my word-processing chores without the block cursor. (I am "out" $1.28, plus tax, for the chip; but I think I can absorb that!)

Perhaps this can serve as a warning to other owners of factory-modified, 80-column, double-density Osborne I's who might be considering performing the block-cursor operation.

John A Hansen
Council Bluffs, IA

Thom Hogan's article in the June/July issue made the greatest improvement in my OZ since the Screen-Pac and DD upgrade except for one thing, it does not work with the 80-column screen and I do not want to go back to the 52-column screen for everything. How about getting Thom or someone else to write the instructions for upgrading the 80-column card. Thom's article is very detailed and this helped very much in making the modification. I hope that a followup article for the 80-column card is just as detailed as most of us are not electronic engineers and drawings as clear as the ones in Thom's article are not always available.

Jerry Boyce
Charlotte, NC

Good idea. We'll work on it right away. We have an Ozzie that needs such a fix.

Executive Needs

As an owner of an Osborne Executive I am interested in subscribing to your magazine. As the first date given in this letter header suggests this is the second time I have written to you... 223 days have elapsed and yet much of what I wrote about as an Executive owner

Continued on page 70

THE OSCOOL FAN™ – A REAL IMPROVEMENT

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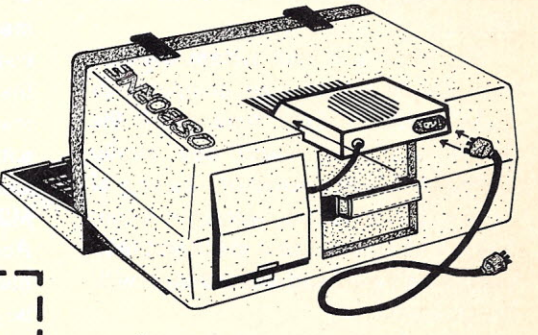

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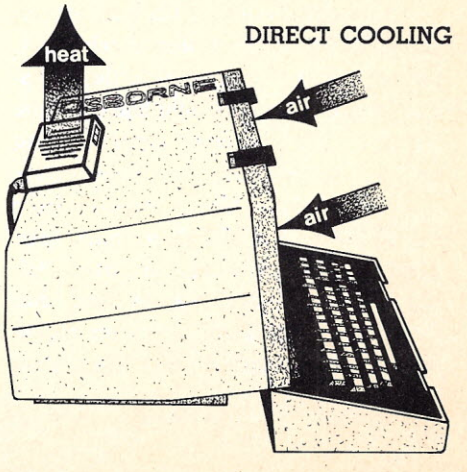

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UserGroups

User Groups from page 45

This is not one of the most inexpensive communications packages available, but I swear by it. COMMX-PAC is actually a collection of several programs on a very full 92K disk, including COMMX (the actual *smart terminal* emulator). CONSOLX allows others (or yourself) to remotely access your computer system (your own RCP/M), MBORD allows you to set up a complete (though somewhat limited) BBS of your own, and BORDM is a data base manager that can be user-designed to accommodate MBORD.

The extent of this software collection alone should give you plenty of reasons to consider adding this program to your library. The ease of use inherent in these programs, combined with the smooth way in which they operate alone or together as a complete system, makes this package doubly worth $200!

COMMX performs every function one would expect from a *smart terminal* communications program — and then some. With COMMX at both ends, all file types and sizes (including wildcard names) can be transferred error-free, and single-site control can easily be used for electronic mail and file transfers between systems with different disk formats.

The electronic mail system even allows you to set up your computer to make calls at a later time (when the phone rates are lower) and totally unattended, with automatic dialing of each system specified, automatic logon, transfer of all out-bound mail from both sites, then logoff and continuation with the next number.

Flow controls used in file transfers include: XON/XOFF, transmit echo wait, inter-character transmit throttle, transmit line delay or definable line continue prompt, and receive control using DC2/DC4. There are also provisions for a receive data filter, receive from MODEM7 or XMODEM, terminal telephone log file (allowing one-button dialing with keyboard macros and dial parameters included!), a printer toggle and data encryption and translation files.

The user can also call up a sorted disk directory which shows remaining disk space, or rename or delete files or change disks without leaving COMMX. In short, COMMX alone is an excellent full-featured telecommunications program.

CONSOLX provides remote control access to your system for applications including electronic mail, setting up a bulletin board system, or to allow use of your computer from another system in your home or office. You can optionally choose to have your system accessed only by password, operate on a *call-back* basis, monitor the number of voice calls, log-on attempts and actual log-ons, and/or auto-start any other program for the caller.

Optional welcome files, operator chat and a convenient test mode are also available to the user. With CONSOLX, you can actually call up your computer from any phone and use it like you were sitting at the keyboard! And — upon loss of connection or a system timeout, CONSOLX automatically restarts and awaits the next caller.

With MBORD and BORDM, you can set your computer up to operate like any menu-driven BBS by setting up your own menus, text files and data bases for the caller to access. Welcome messages, menus and test files are user-designed with any word processor and the data bases are set up and run with BORDM, MBORD's built-in data base manager. Access to CONSOLX and, thus, either disk drive and all system files, can also be given as an option to MBORD callers.

In short, COMMX-PAC is a *lot* of communications capability for the money. The documentation, though skimpy and sometimes confusing, is still reasonably understandable and the program runs smoothly and is fun to operate. The first time you or a friend actually calls up and accesses your computer, you will get a grin on your face that will take many months to wear off.

With CONSOLX's auto-starting capabilities, you can write your own message base, on-line game or anything else, in virtually any micro language, and allow callers access to that. And remember — I already said COMMX, the main terminal program in this package, is well worth the money by itself.

COMMX-PAC is available in configurations and disk formats for virtually any computer running CP/M, including the Osborne 1, and Hawkeye Grafix will configure the program in a format for your computer, if it isn't already available, for an additional $35.

If you feel the price is too steep, versions of COMMX, CONSOLX and MBORD/BORDM are also available separately, at a lower price for each. Still, when combined in COMMX-PAC, all four major programs and the utilities are a bargain that I can only recommend highly. COMMX-PAC is $199.95 and available from Hawkeye Grafix, 23914 Mobile, Canoga Park, CA 91307.

Reprinted from the Kaw Valley Modem Association Newsletter. *Alan R. Bechtold, of Topeka Kansas, is publications director for* POLICENET *magazine, a national quarterly for computing law enforcement.*

UserGroups

Portable Companion would like to hear from your user group. Send us your user group's name, a contact name, your group's mailing address and any information for newcomers, including when your group usually meets.

Send a copy of your newsletter, if you have one, and any suggestions you have for this section of the magazine, including any articles that you think are appropriate, to:

Portable Companion
User Groups
PO Box 5384
Redwood City, CA 94063

SUDDEN! PRODUCTS GROUP

ACTIVE TRACE $65

If it weren't for this fantastic program I wouldn't even bother with BASIC anymore. This set of tools makes BASIC programming a joy! ACTIVE TRACE is something no MBASIC programmer can afford to be without. Speeds debugging, boosts productivity.

STEM $199.00

STATISTICS & ECONOMETRICS for MICROCOMPUTERS

STEM is a full-featured statistical and econometric package that was orginally developed for use on DEC computers. Now it is available for you to run on your Osborne microcomputer under CP/M. It is very complete and very easy to use.

WARNING:
STEM is a professional package designed for those who use and understand statistics on a professional level. It is not a "teaching program" nor a toy. In order to make full use of the power of STEM you should be familiar with such concepts as:

- N-way analysis of variance & covariance
- Complex algebraic transformation of data
- Sub-sampling • Plotting • Data sorting • Projections
- Analysis of statistical distributions
- Correlation & multiple regression
- Analysis & correction for autocorrelation
- Heteroskedasticity & multicolinearity tests
- Two-stage least squares procedure
- Unequal cell frequencies
- Missing observations & repeated subjects

STEM is comparable to mainframe packages selling for much, much more. Go ahead—unleash this power on your microcomputer today!

If you've been looking for a **linear programming** package to run on the Osborne, here it is. Available for a limited time **FREE** with the purchase of the **STEM** system.

THE ENHANCER! $35

If you use WordStar then you need this program. **THE ENHANCER** patches any version of WordStar in 45 seconds to give you AUTOMATIC:

NOW works with WS 3.3.

- *Blinking Cursor (on/off/variable rate)*
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+ + Call for any other printer + +

2-WEEK MONEY-BACK TRIAL PERIOD

MOON BUGGY $30

This is the best arcade-type game ever written for the Osborne-01 computer! You'll go wild when you get your hands on this! The programmer is a magician!

TIRED OF GAMES? TRY THIS ONE ANYWAY!
C'MON, WHAT HAVE YOU GOT TO LOSE?

- *Incredible Graphics*
- *Incredible Arcade-style action*
- *Incredible Speed*
- *Incredible Sound (it's true!)*

TWO-WEEK MONEY-BACK GUARANTEE

*** WORD ROOTS *** $30

This program is designed to boost your vocabulary skills dramatically through learning to break words into their component parts. You learn to recognize WORD ROOTS from the Greek and Latin, along with the PREFIXES and SUFFIXES which can build dozens of essential words out of a single word root. You'll be amazed at how your vocabulary improves with WORD ROOTS. Exciting format keeps this program fun and challenging as you learn.

GAMES PAK $30

These three game sets are now available only as a complete package at one low price. The package now includes nine games, including two SIMULTANEOUS two-player action games:

SPECIAL OFFER $99

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- *Six-foot EXECUTIVE parallel printer cable.* $35

CompuMagic Presents:

$24.95 MANYKEY $34.95

This fantastic package lets every program automatically set the arrow keys & function keys. At last you can go from WordStar to Supercalc to dBASE II without stopping to reboot! Wonderful for double-density and ESSENTIAL for any hard disk! Specify floppy or hard disk system when ordering.

LOAN AMORTIZATION $59.95

Professional package does simple or complicated loan calculations easily and rapidly. Does FHA245's, variable interest rate & multilevel payment loans, balloon payments. Send output to screen or printer.

CMAUTO + $24.95

Makes any program 'Load-N-Run' from any user area on any disk. Create your own AUTOSTor EXECST programs. Other programs in this package let you:

- *Use computer as a typewriter*
- *Quickly change serial port*
- *Quickly change screen size*
- *Convert WS files to doublespace*

dBOOK $25

Actually, de book is the classic dBASE II USER'S GUIDE by Adam Green. Contains many essential hints and techniques for making effective use of dBASE II.

Now available—dBOOK II is the Advanced User Guide

DISK HOMES $18

Media Mate provides a good home for up to 50 diskettes. This is the best one we've seen.

MEDIA MASTER $29

OSBORNE (⟷) IBM PC
OSBORNE (⟷) OTHER CP/M
OSBORNE (⟷) TRS-80

This is the cheapest and best of the programs to transfer files between the Osborne-01 (or Executive) and another alien system. You can format, read, and write a staggering variety of alien-type disks. You can move files of any type between any two types of disks, and you can perform all this magic quickly and easily, with a minimum of fuss. Since most alien formats are double density, you will need a double-density Osborne in order to run this program.

HEXPRINTER $20

Patches WordStar to send any hex codes to your printer. We have only 20 copies in stock. List price $35, now only $20 with any other purchase (while they last).

dGRAPH $195

Professional system automatically creates many different graphs from your dBASE II or spreadsheet datafiles or from hand-entered data. Supports autoscaling & many different options. Double density required.

dUTIL $70

The famous utility that effectively adds macro capabilities to dBASE II. Boosts your productivity, aids readability, and more.

QUICKCODE $195

Allows you to create dBASE II applications programs in minutes! Easy screen design, easy database design, easy report design. Rapidly generates good sourcecode for 12 different kinds of dBASE II programs which you can further customize if you wish. Double-density is required.

PUBLIC DOMAIN PAK $99

We've had many requests for our own package of "the best public domain software." If you can't get such software through your local user's group then call for our latest catalog. We list 16 disk sides packed with fully debugged, documented public domain software culled from hundreds of disks of junk.

DISKAIDE $45

This programmer's tool lets you examine & change any byte in any file of any kind. Because it is record and field-oriented it is particularly well suited to database debugging. Runs from within MBASIC.

OSBAUD $50

Speeds up your serial port like crazy! You'll get a switch-selectable choice of 16 different rock-steady crystal-controlled baud rates from 110 baud all the way up to 19,200 baud. Installation requires making four soldered connections and cutting one trace.

OSDEX $9

This is the comprehensive cross-index to the Osborne-01 blue manual that should have come with your computer in the first place (but didn't). With this index you can instantly find that information you always suspected was in there somewhere. You need this!

OSBOARD $29

An exciting full-screen graphics editor for the Osborne, including printer drivers to copy the picture on screen to most printers.

OSGRAPH $34

Lets you create bar charts, pie charts, and scatter plots on screen and on your printer. Can take input from keyboard or from files.

OSBRIEF $24

Makes sequenced electronic "slide shows" on-screen, with many special effects. This will be included FREE if you buy both OSBOARD and OSGRAPH (described above).

KEYBOARD OVERLAYS $17 ea.

These plastic overlays live on your OS-1 or Executive keyboard and provide a handy reference source for the hundreds of software commands you need to use. They are available for WordStar, Supercalc, dBASE II, and MBASIC. If you have an older (tan) machine they'll also keep your hands warm! You need to tell us whether you have an older tan case or a newer blue case.

MONITOR ADAPTOR $27

The CVA-1 monitor adaptor allows your old 52-column Osborne to drive any standard external monitor. Excellent quality.

DO YOU KNOW:

How to switch MBASIC output to the printer, to the screen, or to both at once using a single POKE command?

How to disable the (CONTROL-C) in MBASIC so people can't escape from your programs?

How to flash rapid graphics on the screen?

These and other useful tips are in the latest SUDDEN! catalog.

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___	HEXPRINTER (w/purchase)	$ 20.00	
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Beginner's Tips

Faster than a Shooting WordStar

A step-by-step tutorial on speeding up WordStar 2.26 and 3.30

William D. Esteb

If you're one of the many Osborne 1 owners who has upgraded to MicroPro's new 3.30 version of WordStar, you're enjoying several new features and a much easier printer installation process. But have you noticed it takes twice as long to display all the copyright information, serial number and configuration details?

Enduring this long delay with every boot-up is unnecessary! In fact, the makers of WordStar programmed-in those annoying pauses. And together we're going to unprogram them.

The memory addresses we'll be changing to increase the speed of WordStar are different for both versions. So let's walk through the process together using DDT.COM found on the CP/M Utility diskette.

As always with this or any kind of modification, we'll be working with a copy of WordStar, already configured by the installation procedures supplied with the software.

Speeding up Version 2.26

Put your CP/M Utility diskette in Drive A and a copy of WordStar in Drive B. At the A) prompt type in DDT B:WS.COM and press Return. After both drives stop, your screen should look like this (the ⮐ symbol stands for the Return key):

```
A)DDT B:WS.COM⮐
DDT VERS 2.2
NEXT PC
4000 0100
```

If you've never used DDT before, the rest of this process may seem a little strange, but relax. Don't confuse a capital letter O (O) with the number zero (0). In this operation you'll be using the number zero.

At the hyphen prompt, type in D02C0 and press Return. Now the following will be added to your screen:

```
-D02C0⮐
02C0 00 00 C9 00 00 C9 00 00 .....
02C8 00 00 00 C9 00 00 00 03 .....
02D0 09 19 19 00 00 00 01 01 .....
02D8 00 00 00 00 00 00 00 00 .....
02E0 00 00 00 00 00 00 00 00 .....
02E8 00 00 00 00 00 00 00 00 .....
02F0 00 00 00 00 00 00 00 00 .....
02F8 00 00 00 00 00 00 00 00 .....
0300 00 00 00 00 00 00 00 00 .....
0308 00 00 00 00 00 00 00 00 .....
0310 00 00 00 00 00 00 00 00 .....
0318 00 00 00 00 00 00 00 00 .....
```

If you're familiar with DDT, you'll recognize the hexadecimal numbering by 8's of the memory locations on the left, the actual hexadecimal contents of each memory location in the middle and the ASCII equivalent on the right. When there isn't a printable ASCII character, DDT displays a period as in these memory locations.

We're going to change the contents of the four memory addresses which currently hold 03, 09, 19 and 19. These represent the number of "loops" the microprocessor performs while you read the screen.

To change the values in these memory locations we'll use DDT's S command.

The next step may seem even more strange, but hang in there. At the hyphen prompt type S02CF and then press Return. This is the first memory location we're going to change. Now your screen should look like this:

```
-S02CF↵
02CF 03 _
```

This shows that the hexadecimal contents of memory location 02CF is 03. The cursor to the right is waiting for you to enter a new value.

We're going to reduce the 03 to a 01. So at the cursor type in 01 and press Return. Now your screen should look like this, revealing the contents of the next consecutive memory address:

```
-S02CF
02CF 03 01↵
02D0 09 _
```

Enter another 01 replacing the 09. Repeat this process two more times until your screen looks like this:

```
-S02CF
02CF 03 01↵
02D0 09 01↵
02D1 19 01↵
02D2 19 01↵
02D3 00 _
```

Instead of entering a 01 at 02D3, type a period (.) to tell DDT you're through making changes with the S command. Press Return and the hyphen prompt returns. Exit DDT by typing Control-C and you're back to the familiar A> prompt. To save these four changes for WordStar version 2.26 type:

```
A>SAVE 56 B:WS.COM↵
```

DDT is writing 56 hexadecimal pages of your new, faster version of WordStar 2.26 over the old. Press the reset button, place your new version of WordStar in Drive A, press Return and watch WordStar boot significantly faster.

Speeding up WordStar 3.30

If you own the new 3.30 version of WordStar you can use the same technique to speed up the booting process. WordStar 3.30 uses different memory locations, plus there are five locations to change instead of four, and 3.30 is a larger file consisting of 70 hexadecimal pages instead of 56.

Put your CP/M Utility diskette in Drive A and a copy of WordStar 3.30 in Drive B. At the A> prompt type in DDT B:WS.COM and press Return (↵). After both drives stop, your screen should look like this:

```
A>DDT B:WS.COM↵
DDT VERS 2.2
NEXT PC
4600 0100
-
```

Once again, don't confuse a capital letter O (O) with the number zero (0).

At the hyphen prompt, type in D02A0 and press Return. Now the following should appear on your screen:

```
-D02A0↵
02A0 00 00 C9 00 00 C9 00 00 .....
02A8 00 00 00 C9 00 00 00 03 .....
02B0 09 19 40 09 00 00 00 00 ..@.....
02B8 00 01 14 00 00 00 00 00 .....
02C0 00 00 00 00 00 00 00 00 .....
02C8 00 00 00 00 00 00 00 00 .....
02D0 00 00 00 00 00 00 00 00 .....
02D8 00 00 00 00 00 00 00 00 .....
02E0 00 00 00 00 00 00 00 00 .....
02E8 00 00 00 00 00 00 00 00 .....
02F0 00 00 00 00 00 00 00 00 .....
02F8 00 00 00 00 00 00 00 00 .....
-
```

We're going to change the contents of the five memory addresses which currently hold 03, 09, 19, 40 and 09. Once again we'll use the DDT S command. So at the hyphen prompt type S02AF↵. DDT responds by displaying the address and its contents:

```
-S02AF↵
02AF 03 _
```

DDT now awaits your entry of 01. Press Return and repeat the process until your screen looks like this:

```
-S02AF
02AF 03 01↵
02B0 09 01↵
02B1 19 01↵
02B2 40 01↵
02B3 09 01↵
02B4 00 _
```

Instead of entering a 01 at location 02B4, type a period (.) and press Return, and the hyphen prompt returns. Exit DDT by typing Control-C and you're back to the familiar A> prompt. To save these five changes type:

```
A>SAVE 70 B:WS.COM↵
```

Not only will your boot up time be faster, but most commands from the main menu will execute faster too.

And isn't faster what word processing is all about?

New Products

New Product information is derived from press releases sent to The Portable Companion *by the producing companies. Statements of fact or opinion expressed in the new product announcements in this section are those of the producing company. We are not able to check these statements for accuracy, nor have we evaluated these products, although we are planning to evaluate many of them.*

Sweet Fans

Atmospheres announces the release of the BEE Fan. The BEE Fan, powered electrostatically, works like the wings of a bee, using two bending piezoceramic mylar blades. It is a solid state device, and has no wearing parts, insuring an almost infinite life. The company claims that no failures have occurred on one fan which has been running continuously for more than three and one half years. Further, because the BEE is solid state, with its own built-in DC power supply, it has no surges or spikes. This allows the user to connect The BEE to an internal power source without damaging sensitive equipment.

Unlike rotary fans, The BEE produces no electromagnetic interference or radio frequency interference. It uses 1/15th the power of conventional fans, and is only 2 inches by 3.3 inches by 1.12 inches, the size of two packs of cigarettes. It is also quieter than conventional fans. The fan comes with a molded AC plug, and is UL listed for safety. Atmospheres offers a one year replacement warranty. The price is a low $24.95.

For more information contact Atmospheres, 1207 Eighth Avenue, Brooklyn, NY 11215, phone (718) 788-6799.

Billing for Rentals

Arctic Data Corporation announces a new addition to its line of industry-related software, Equipment Rental Billing System. It is designed for companies renting equipment and/or providing services which are billed for on a recurring basis.

The menu-driven system supports multiple billing periods, and can be used for both equipment and service billing concurrently. It maintains complete equipment identification data, and each unit can be designated as rented, in stock or out of stock. Billing can be via customer, purchase order or both, with different shipping and billing addresses. Reporting is available by equipment model or customer number. There is complete accounts receivable reporting with statements, aged trial balance, alphabetical customer lists, an aged accounts receivable report, and transaction listings. This package is also available with accounts payable, general ledger, and payroll.

For more information, contact Arctic Data Corporation, 1839 1st Avenue, Price George, B.C. CANADA V2L 2Y8, phone (604) 562-5240.

Arctic Receivables

Arctic Data Corp. announces the release of Accounts Receivable System. This menu-driven system maintains extensive monthly/yearly sales analysis for up to 30,000 different product categories and prints statements and invoices on standard forms. All standard reports are provided with an aged trial balance spread over five periods. Several types of on-screen account inquiries facilitate data retrieval. This package interfaces easily with a general ledger, and is accompanied by a detailed user guide with data entry forms.

For more information contact Arctic Data Corp.. 1839 1st Avenue, Prince George, B.C. CANADA V2L 2Y8, phone (608) 562-5240.

File Transfer and Format Conversion

Compu-Draw offers a Microcomputer Disk Format Conversion and 9-Track Tape Service, which lets you transfer files across most microcomputer operating systems including IBM PC-DOS, MS-DOS, CP/M-80, and CP/M-86, and disk formats (8" or $5^1/_4$" formats, single or double sided, any density, 48 or 96 tpi).

The company can also transfer files between these disk formats and 7- or 9-track tapes used on mainframe computers. All commonly used tape formats and densities are supported. Conversion between the microcomputer and tape file formats is also provided. Depending on the formats involved, the cost ranges from $4 to $8 per input and output disk, with no separate downloading charges. Compu-Draw cn also provide destination disks.

For more information contact Compu-Draw, 1227 Goler House, Rochester, NY 14620, phone (716) 454-3188.

Champion Accounting: Vers 4.0 With Warranty

Champion Software recently released version 4.0. of their accounting package. The company feels so confident of their new release that they are offering a one-year warranty.

The package is written in dBASE II and comes with a modified run-time ver-

Continued on page 71

Processed Word

Team Writing in the Field

Suggested conventions to follow when you are participating in a writing/editing project involving several writers/editors.

Tom Armor

Most of us that write lengthy documents have learned to do so as single authors. Our habits and techniques for using a computer to write were most likely learned and developed in the comfort of our home or office over many rewarding and frustrating hours. Now many of us are facing a new writing challenge made possible by portable computers in the hands of groups or teams of writers using them away from the home or office in "field" work.

For example, it is very common for a team of four or five management staff of a company to visit a subsidiary or customer firm to review an opportunity or problem. The resulting report is often the basis for important decisions. As portable computers become more common these "field reports" by multiple authors can be done on-site while information is available, and issues raised by the report or document can be easily discussed with the local staff or client.

The suggestions outlined here come from experience writing reports in hotel rooms, mostly in Third World countries where no secretarial help was available. Whether you need to do this work in a tropical jungle or a temporary office in Gotham City with the eventual help of professional editors, some general planning along the lines below can make the task easier and the team more productive.

Speed and convenience of document production are only two benefits of using a portable computer in these situations. Several other advantages can be realized by a team that fully appreciates the power and utility of a portable computer:

1. Notes can be prepared daily and distributed to other team members. We have found this to be a very good way of sharing important information and experiences, particularly when some members join the team at different times or must visit different parts of the field site.

2. Drafts can be more readily prepared and shared with other team members for reaction and planning of the final document. Duplication and omissions can be identified early enough to correct.

3. The equipment can be used to make multiple copies of short pieces to avoid the problem of getting xerox copies made.

4. The team does not have to draw upon the resources of the "host," a very important consideration in many situations.

Setting Up the Computer

Experience has shown that most "field writing" is done after hours at the hotel or place of residence of the team. Therefore in most cases it is usually best to set-up the computers there rather than in an office. A word of caution—setting up the equipment in a team member's room will prove very disruptive to that member's life; therefore, a common room is preferable. The equipment should be set up as soon as possible to

discover any problems before the heavy writing tasks begin.

The actual placement of the equipment can be important. For instance, if two computers and printers are being used, it often makes sense to place them so that connecting cables, battery wires, paper and other items can be exchanged between the machines easily if problems occur with any one. In dusty areas a simple plastic sheet can be placed over everything when not in use to serve as a dust cover and as rudimentary security from curious hands.

The utilization and storage of diskettes can become a problem unless some general rules are established. One approach is for each team member to maintain physical possession of their own text file disks. This reduces clutter and opportunities for misusing disks. The difficulty is that most people will not take the time to make a backup copy or transfer working files to a common disk or set of disks.

One way around this is to designate someone as "disk manager" and give to them the responsibility and authority for transferring individual files to a master set at the end of each day or whenever revisions have been made. This should be someone most familiar with the equipment (and it should be acknowledged as the thankless task it is). This job should be rotated among the team during the assignment to share the job and spread the learning.

Learning To Use the Computer

An occasional problem is that some team members will be skilled and comfortable with the use of a computer and word processing, while others will not. Depending on the time and circumstances of the effort some simple instruction and help between team members can make things go much more smoothly.

Still, the bottom line often comes down to people initially voicing no interest in learning to use the computer. Then as they see others making progress they decide that they would like to learn. The problem is that so much effort is duplicated when each wants to be instructed individually. Some suggestions for reducing this problem are:

1. Prepare a short one- or two-page *step by step* set of instructions specific to your particular computer/printer setup that will allow someone to turn on the equipment and simply type text and save it to a disk file. Later pages of such a customized manual can describe how to use the printer and more sophisticated editing commands. Experience has shown that the simplest and most unassuming instructions are needed at this point for the first time user (e.g. "Step 1- Turn on power with switch at right rear of computer...").

2. Insist that everybody read through this manual at the outset, even if they profess no interest (they can skip the parts that are not meaningful as yet).

3. Encourage experimentation with the equipment. It is very hard to destroy something important if only sample files are used.

4. If there are several members of the team that are first-time learners ask that they make notes about questions and have a meeting with all new learners together to go over things. This sounds a bit inhibiting, but the time spent by team members answering the same question several times can be extraordinary.

File Management

File management is perhaps the most important and first-neglected issue when a team is preparing a document in the field. *It is extremely important to set down right away the rules for filename planning and management!* The typical scenario is for everyone to say they are just doing drafts and will set things in order in the next draft (heh heh) ... However, experience has shown that things get out of hand much too soon.

Each team will have to arrive at its own way of handling this issue; following are some considerations. (The following suggestions are based on CP/M, but can be adapted to other filename requirements).

At the outset, develop a file naming system that meets your needs and includes codes for individuals, document sections, state of draft, and any other important identifying information that will allow easy identification of the file by looking at the filename on the directory. This should be a one- or two-page document, and copies should be made for each team member. Here is a suggested method:

1. Assign a single letter code to each person on the team and have that letter appear in the first position to the right of the period in the filename.

2. Use the remaining two positions after the letter to indicate first the chapter number and then the next subheading number (or use letters if you will have more than nine of either) where the file will appear in the document.

3. Use the eight positions to the left of the period for an acronym or abbreviation that describes what the file is about and which version, if more than one.

4. An example is: MINO&M2.A3C This is a file about Ministry Organization and Management by Armor ("A") to appear in chapter three, subsection C. It is the second version being saved since other versions exist with different material or format.

5. For notes and letters and other things that are not part of the document use "XX" or whatever in the last two positions after your single letter code to the right of the period (e.g., my letter to Smith might be named SMITHLTR.AXX).

6. In practical use you will find that you must change the last two char-

acters of the filename often to keep it accurate as the final organization of the document becomes clear, but this will allow someone to readily find and place the file where it belongs in the document should you get run over by an elephant.

7. At the end of a session on the computer, rename files as needed and erase backup files not needed. At this time you should also make back-up copies of your disk or use PIP to copy your most current files onto a master backup disk. Also make a "hardcopy" (printout) of the disk directory and enclose it with the disk.

8. Keep your files short. Even if there is no new section (according to the file plan), but there is some natural break in thought or format, make separate files. They can be combined into one later or chain printed. This allows easier proofing and and correcting.

9. Save *all* hard copies. It is best to simply stack them up in a single location as they are superseded by later versions. If the worst happens, a document can be reconstructed from them.

Editing Conventions

Some simple rules should be established and followed for preparing the text within all files (these suggestions relate to WordStar, but they can be adapted to other word processing programs):

1. End every file with a single carriage return (necessary for chain printing).

2. Establish conventions for often used terms or phrases so that in drafts you can simply enter something like fv when you want to say *Fruit and Vegetable Marketing Board*. This will allow you to type faster and use the automatic find and replace command at the end to do all the lengthy word input. Be sure to use the exact code you establish (for example, use lower case, select two letter codes that do not occur in normal english, no possessive apostrophes, etc.).

3. Agree on single/double spacing, indentation, heading format, etc. Consider the problems of using indented sublistings when extensive reformatting will be necessary. For instance if you want to do drafts in double space and then reformat to single space, you will have problems with maintaining the indentations. It is best to use one, two or three dashes before the first word of an item that is to be indented one, two or three levels in the final draft.

4. Agree upon spelling, hyphenation, use of terms, etc. Many times these issues are not known until drafts are underway, but it is useful to review them early when they arise and set a convention and inform all team members.

5. When the time comes for "final editing" (in quotes because there are many definitions of final), a little thought and care can save much wasted time. Establish an order of editing. It is much more efficient to have sections read for substance and organization before editing for spelling, typos, or wording. Thus the major changes can be made (often eliminating parts with nitpicky errors of spelling/typo nature), and then at the end go through and correct the small stuff. The time saved can be tremendous if people will trust that "taht" really means "that" and will be fixed later.

6. Wait to run the spelling check program until all other editing is finished, including the find and replacement of abbreviations with the full words.

7. One of the biggest problems is losing track of which revisions or cor-

Continued on page 70

PRINTERIZE™ YOUR WORDSTAR®

Why?

* So you have easy access to all your printer's capabilities from inside of WordStar.
* No need to run a BASIC program to set-up your printer.
* Helps you save your sanity from trying to figure out how to patch WordStar yourself or from magazine articles.

Printerizers go far beyond those magazine patches, using an installer that is VERY easy to run. They add from 0 to 5K to WS.COM, depending on the printer selected. The specifics of what will be gained vary from printer to printer, but they all have the same goal in common:

"Give the user easy access to every useful capability of his printer."

Some Printerizations (notably Epson and Gemini) require HexPrintR to access some of the printer's less frequently used options. Call or write (specifying your printer) for details.

HexPrintR™ changes the WordStar printer control character ^R into a "Hex-Printer" function. For example:

^R 10, 15, 20 ^R

in a file printed by WordStar with HexPrintR installed into it would send the same thing to the printer as the BASIC program statement:

LPRINT CHR$(10) ; CHR$(15) ; CHR$(20) ;

(Not recommended for daisy wheel printers)

PRINTERIZERS ARE AVAILABLE FOR:

☐ Epson RX/FX printer ☐ Epson w/Graftrax 80
☐ MX80-111 / MX100-111 / Any w/Graftrax Plus
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☐ Gemini 10(X) or 15(X)
☐ IDS Prism / Microprism ☐ Okidata 82A / 83A
☐ Okidata 92 / 93 or 84
☐ Brother HR-1 or Comrex CR-1
☐ C. Itoh Prowriter I or II
☐ NEC PC-8023A ☐ Other DMP-85 printer

In the following diskette formats:

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☐ Printerizer: **$35.00**
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Prices include U.S. or Canadian First Class mail delivery. California residents add 6% sales tax. Overseas orders pay in US funds adding $4 shipping. Payment may be by money order, check, Visa or Mastercard. UPS COD add $4, 2nd day UPS COD add $6. Please include phone number with order. Both Printerizers and HexPrintR work with versions 2.26, 3.0 and 3.3 of WordStar under CP/M and CP/M Plus.

Trademarks: HexPrintR and Printerizer, C I Software; Prowriter, C. Itoh Electronics; WordStar, MicroPro Corporation; Graphtrax, Epson America.

C.I. SOFTWARE & COMPUTER PRODUCTS
1380 Garnet Ave. E149, San Diego, CA 92109 619/483-6384

Processed Word from page 69

rections noted on a hard copy have been incorporated in the disk version. It is important to initial and date/time the hard copy by hand when anyone reads it for content, organization and errors. When minor corrections are made on the disk version, note that with a special mark as well on the original hard copy to avoid unnecessary printing.

Document Production

When all the text files have been edited for content and proofed for typos and spelling errors, you are ready to print the complete document. This takes some careful thought and a thorough understanding of MergePrint (MailMerge) and the "dot commands". It is strongly recommended that whoever will manage this process practice with dummy files ahead of time. Some issues are:

1. Before printing anything, be sure each file is prepared according to the editing conventions agreed to at the outset. Now is the time to format each file correctly for spacing and indentation. Each file must end with just one Return (carriage return).

2. Tables or charts can be prepared as separate files and be inserted in the body of another file at print time by use of the "file insert" (.FI) dot command. This allows you to fool with the table all you want without having to go into the body of the text and lessens the risk of errors.

3. Use PIP and block commands to move files onto the same disk and to combine files to make printing easier. Though a MergePrint (MailMerge) command file can usually accomplish the printing of multiple files on multiple disks, the chance for error is lessened by a prudent reduction in the number of files and disks.

4. Do not underestimate the time required for printing a final document. Bibliographies, appendixes, and other "stand-alone" items can be printed earlier and left without page numbers. Do not try to predict page numbers — it is much easier to simply number them by hand in the proper sequence at the end of the document.

Although the suggestions above are aimed toward the team of writers in a field situation, they can be helpful for any group working under more leisurely conditions that must collaborate in a writing effort.

Letters from page 60

hasn't changed. The big question I address to you is: will you support the Executive model? Your last issue (October 1983) did not and I gather that your resumed publication hasn't (this is what I have been told).

As co-chairman of the New York Osborne User's Group, Connecticut chapter, I have struggled along trying to make sense of the quirks, incompatibilities and why some O1 software will not boot, some cannot be read, some can but only after a "PIPing" struggle, and some goes with no trouble at all.

In my last letter I detailed some technical areas, questions and findings that should be of specific concern to other Executive owners. As I do not know if this letter will be followed up on, let alone read I will save those to another download.

Let me just conclude with my original plea and see what response you care to make.

You are the last best hope of the Executive owners, however few we may be. This letter to you is in the nature of a lifeline. I suspect many other Executive owners are in my situation. Why not list Osborne groups or individuals using the Executive who are willing to give mutual support?

I have gotten real help from letters of owners of another exotic computer I have. For starters you can use my name.

Stephen T. Whitney
Darien, CT

Your previous letter was, indeed, lost in the chaos of the bankruptcy days. We cannot find it, but we can promise coverage of the Executive. In this issue we feature an article by Brad Baldwin on Executive bug fixes. Also, The Wizard (Brad again) will be devoting time to covering Executive problems.

We are also seeking the names and addresses of user groups across the country, to publish in a future issue. Send user group information directly to Portable Companion, User Groups, P.O. Box 5384, Redwood City, CA 94063.

Congratulations on being able to reboot *The Portable Companion*. Include me on your list of subscribers.

Last August I sent a check to pay for a two-year subscription, but was unfortunate enough to have been caught unawares by Osborne's bankruptcy and the closing down of *The Portable Companion*. The check for forty-five dollars was cashed, but I did not receive any more magazines, not even the last issue. I really felt cheated because my check had been cashed probably that very same week — September 9, 1983 — that the folks closed up shop. It was pretty close to fraudulent to cash that check knowing full well that the terms of the subscription agreement for which the money was consideration would never be met.

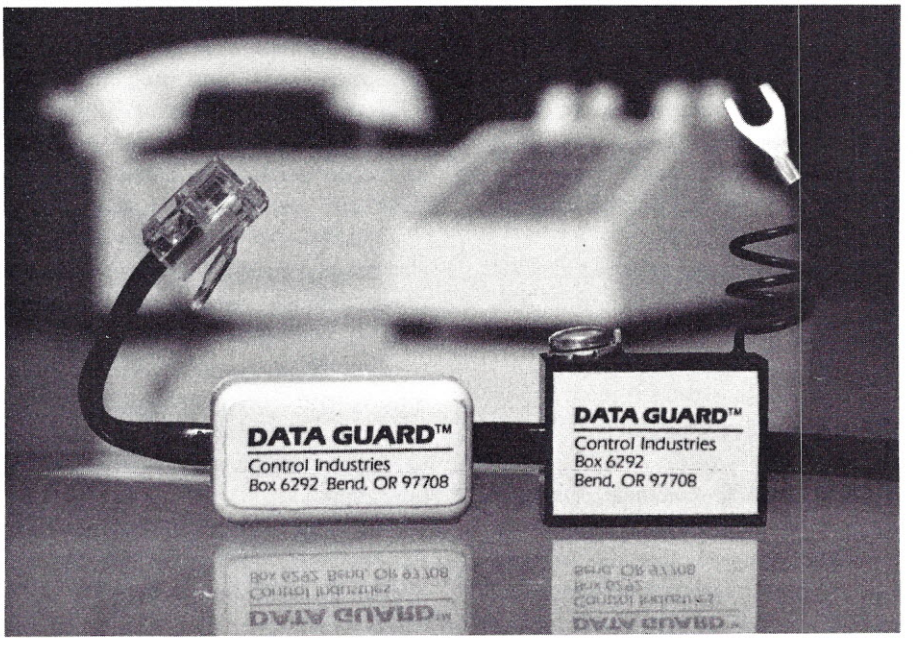
No wonder I am elated that you are getting back in print and that I'll be getting a magazine with information relating to my Osborne Executive: I'm sure you're planning equality of coverage for us Executive owners.

Again, Congratulations! I'm looking forward to the issues.

George W. Welch
Miami, FL

sion of it. There are five modules: General Ledger and Financial Statements; Accounts Payable (with purchase order); Inventory; Payroll; and Accounts Receivable (with order entry and point-of-sale functions). The modules are interactive or "stand alone," and feature real-time updating, which makes financial statements always available and current. CHAMPION includes "help windows," and a powerful data recovery program designed to balance the system should there be a power failure. This package runs on either dual floppy or hard disk systems. Suggested retail price for CHAMPION modules is $495.00 for the 8-bit version and $595.00 for the 16-bit. A Custom Reports Generator and Spreadsheet Interface Program can be purchased for an additional $149.00. The company has also decided to release the source code to qualified dealers and third party developers for $500.00 per module.

For more information, contact Champion Software Corp., 17301 West Colfax Avenue #205, Golden, Colorado 80401, phone (303) 278-8666.



Protect Your Communications

DATAGUARD is an electronic device that provides a protected, dedicated communications telephone line. Once this device is installed, a modem when logged on will always have priority on the line. The device does not disrupt normal telephone functions, and does not isolate any phone from incoming or outgoing calls. It requires no external power source or ON/OFF switch and will work with facsimile equipment or behind a PBX.

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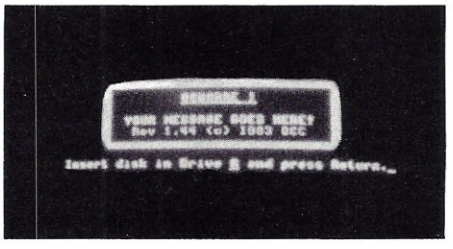

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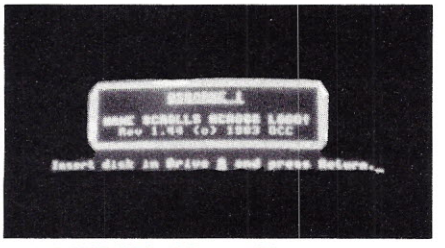

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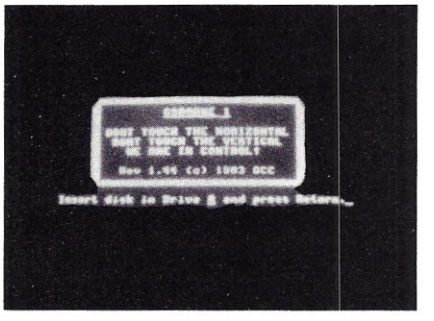

VERSION 3 75 spaces $25.00

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(415) 490-8275

There are two models of DATAGUARD, an in-phone model, which is not visible after installation, and a 12 foot snap-in cord model, which replaces your present phone cord. It is FCC approved, and carries a one year warranty. The suggested retail price for DATAGUARD is $39.95.

For more information contact Control Industries, Box 6292, Bend, OR 97708, phone (503) 389-1969.

Intelligent Terminal

SOFTCOM-Telecommunications utility is a menu-driven CP/M based communications program that can be used as an intelligent terminal emulator and as a CP/M-to-CP/M file transfer utility. It can make your system a terminal to a host time sharing system, and capture data onto your disk and/or printer from a host system. It sends text and other ASCII files from your disk to almost any type of computer, and exchanges any type of file with another SOFTCOM system with error detection and automatic retry.

SOFTCOM's intelligent terminal mode supports transfers up to 9600 baud in full or half duplex, and also XON/XOFF protocol. It supports unattended transfers between two CP/M computers, and also permits transfers through the CP/M console port. Data sent to the host computer can be entered at the terminal or can be sent directly from disk files which were prepared "off-line." SOFTCOM uses an 8080, 8085, Z80 based computer with at least 32K bytes of memory. It is available in most 8" and $5^1/_4$" disk formats. The price is $150.00.

For more information contact The Software Store, 706 Chippewa Square, Marquette, MI 49855, phone (906) 228-7622.

DataFlex: Data Base Application Development

DataFlex™ is an application development database software system for 8-bit and 16-bit single and multi-user computers. It provides the combined functions of a programming language in a relational data base management system, an "image-oriented" screen form processor, report generator, query, and a full set of powerful utilities. It has features such as automatic file definition and code generation, online multi-key ISAM and user definable macros.

DataFlex can be used for configuration programming — designing applications, defining data bases, designing screens, and reports, which can then be used by non-programmers. It can also be used in execution operations, such as entering data, performing file maintenance, and managing extensive backup operations.

For more information contact Data Access Corp., 8525 S.W. 129 Terrace, Miami, FL 33156, phone (305) 238-0012.

Printerizer Improved

C I Software announces that all C I Printerizers™ will now include the HexPrintR™ program at no additional cost. Printerizers give the WordStar user the ability to send any control codes or data to the printer while setting the WordStar printer control codes, to allow easy access to the most desired printer functions. HexPrintR lets you send any data to the printer from inside your document. Both Printerizers and HexPrintR append themselves to WordStar, and become part of it.

Printerizers are available in Kaypro or Osborne diskette formats. For more information contact C I Software, 1380 Garnet Avenue. E149, San Diego, CA 92109, phone (619) 483-6384.

Video Education

TnT Enterprises announces the release of computer education programs on video tape. There are presently 80 titles available, with 300 more scheduled for production. The titles available range from basic hardware usage to advanced networking. Many of the major software packages are covered as well. TnT will also produce custom tapes, if requested.

The tapes are state-of-the-art material, well researched, and presented in an entertaining manner. They average three hours in length, and are available in both VHS and Beta formats. Prices start at $39.00 for basic tapes.

For more information contact TnT Enterprises, 3818 Transit Avenue, Sioux City, Iowa 51106, phone (712) 274-7615.

Recover Files From Bad Disks

DISK FIX-DISK EDITOR and RECOVERY UTILITY can be used to reconstruct files with bad sectors, to recover files from disks with damaged directories, to restore erased files and to do general disk editing.

DISK FIX is menu driven and easy to use. The User's Manual contains specific examples for each application. DISK FIX automatically configures to floppy and hard disks. It can display, edit or copy any sector of a CP/M 2.x floppy and/or hard disk. Direct on screen editing is provided in both HEXADECIMAL and controlled ASCII.

DISK FIX requires an 8080, 8085, or Z80 based computer running CP/M. It costs $150 and is available in most 8" and $5^1/_4$" disk formats.

For more information contact The Software Store, 706 Chippewa Square, Marquette, MI 49855, phone (906) 228-7622.

Travel Service

Travel Scan Videotex is an on-line travel service. The service provides information on airline flights and times, cruise bookings, rental cars, accommodation reservations, and entertainment information.

The system has menus and prompts to help you through 10,000 electronic pages of information. The airline schedules are updated weekly, and the fares updated daily. The system lets you book your own flights directly. It gives you access to lists of hotels, along with the number of rooms, type of hotel, facilities, and rates for rooms. Other modules provide information about car and limo rentals, and provide summaries of theater, restaurant, and night club attrac-

tions.

Corporate users pay a one-time enrollment fee of $100.00 for this service. There are storage fees of 2.00 per traveler. On-line charges are $19.50 per hour during a weekday, and $15.50 during off hours. There are volume discounts.

For more information contact Travel Scan Videotex, Ltd., 5 Penn Plaza, New York, NY 10001, phone (212) 695-5492.

Genealogy Journal

RaeData, Inc. announces its new bimonthly publication, Micro-ROOTS, at $24.95 per year. The new newsletter/journal is written for the microcomputer user that is interested in their family roots/history; as well as the serious genealogist.

The first issue is scheduled to contain articles on Getting Started with your Family Roots; Genealogical Software Reviews; User Group activities; Search for Family Roots; Reviews of Genealogical self-help books; Archival Research Techniques; A Query Column; Calendar of Genealogical Society events; and many other features. Future issues are expected to continue these features, with additional articles and columns of interest to the home computer family historian. It is anticipated that within ninety days of its publication, a bulletin board service will be available, as well as a genealogical/family roots forwarding service.

For more information contact Micro-ROOTS, 14208 Weeping Willow Drive, Suite 32, Wheaton, MD 20906, phone (301) 460-0754.

Nutrition Information

Nutritional Data Resources has introduced three new easy to use personal computer software packages to track 15 nutrients in over 800 foods. NDR's software package gives the home user access to sophisticated nutritional information that is useful in menu planning, coordinating special diets and controlling weight. Professional packages and custom nutritional data bases are also available.

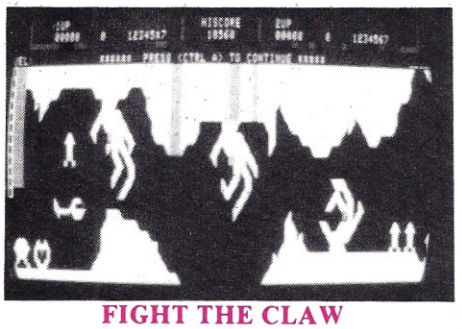
The three software packages offered by NDR are: Nutrient Goal Graph 15-1, which automatically analyzes 15 nutrients for a one day food intake and graphically compares them to the RDA goals by sex, age, and weight. The program checks over 800 foods for levels of 15 nutrients, and readouts rank foods from highest to lowest in each nutrient.

Nutrient Calculator 15 is designed to analyze the nutritional contents of recipes, menus and daily food intakes. This program also calculates the percentage of U.S. RDA's from food labels to actual values.

Nutrient Trackor 15 allows the user to select 20 foods from the data base and provides an analysis of 15 nutrients in each of those foods. Foods can be ranked from highest to lowest in any nutrient.

NDR's packages are available in MS-DOS 1.25, PC-DOC 1.1, CP/M 80, and Apple DOS. 64K of memory and one disk drive are required. Prices range from $40-$60 per package, with a special offer of $120 for all three packages.

For Further information, contact Nutritional Data Resources, P.O. Box 540, Willoughby, Oh 44094.



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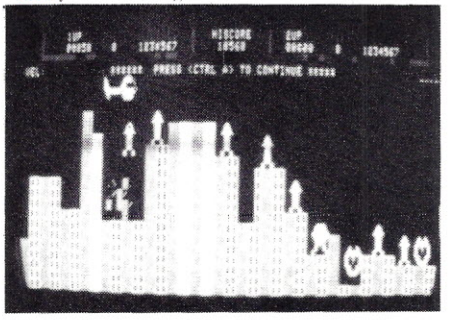

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Tech Tips

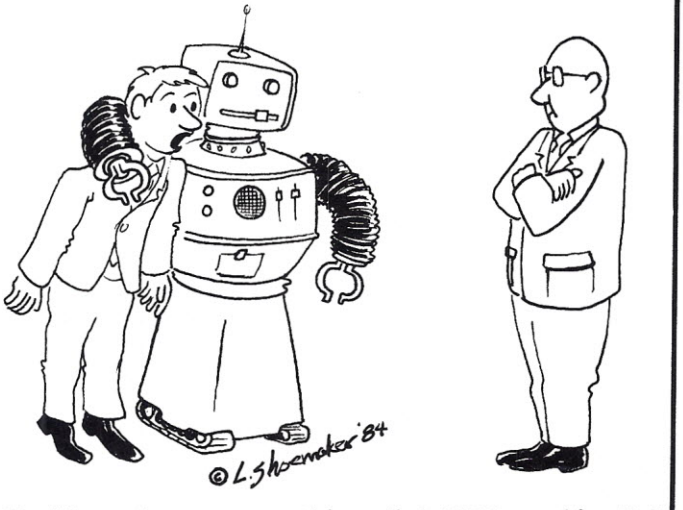
Peeking and Poking Dim Characters

Faster routine to produce half-intensity (dim) characters.

Mike Morearty

The DIM.ASM routine that appeared in the June '83 issue of *The Portable Companion* worked wonderfully. But I thought it would probably be possible to poke half-intensity faster than that routine does. When setting the brightness on a large portion of the screen, as the sample program did, the routine is fairly slow — you can watch the half-intensity moving down the screen. Through experimentation, I found a faster way to set dim or bright characters, and I also found a way to find out if a given location is dim or bright.

The most difficult part of figuring out these routines was making the discovery that for some strange reason, when operating in bank 3 any bytes that the microprocessor gets from memory automatically have the high bit set. Therefore, any commands which are to be executed in bank 3 must have a machine language value of 80H (hexadecimal) or higher.



Could you show me something a little LESS user friendly?

Fortunately, in the Z80 instruction set there are some commands that do what we want. The programs DIM.ASM, BRIGHT.ASM, and CHKDIM.ASM, respectively, set a location to half-intensity, set it to full-intensity, and check whether it is dim or bright. The memory location of the screen position being manipulated is expected to be in the HL register pair for all three routines.

These routines can be read into any program that needs to use them with WordStar's `^KR filename` ↵ command (↵ stands for the Return key, `filename` is the file name of the routine to read in). The program TESTDIM.ASM, listed below, will reverse the intensity of each location on the screen. It makes use of all three routines, and will show you how fast this method of screen access is. At the point where TESTDIM.ASM contains the phrase `^KR filename`, you should read the specified routine `filename` into the TESTDIM.ASM program.

These routines will work whether called from bank 1 or bank 2 and from any part of memory. They will not work on all versions of the Osborne (I know they work on Osbornes with ROM versions 1.3 and 1.44, but not on ROM 1.43; these are the only versions I have been able to test). To see if they work on your Osborne, run the TESTDIM program, open your disk drive doors, and press any key. If the computer goes berserk, sorry — these routines won't work for you. If they do work, though, then you can now use these routines to write programs that access the screen at memory-mapped speed and yet still use the half-intensity ability of the Osborne.

```
; DIM.ASM by Mike Morearty
; Make the screen location pointed to by HL dim.
DIM:    DI              ;disable interrupts
        OUT     2       ;switch to bank 3
        DB 0CBh, 0BEh   ;the Z80 command RES 7,(HL)
        OUT     3       ;back to original bank
        EI              ;enable interrupts
        RET             ;Return to calling program

; BRIGHT.ASM by Mike Morearty
; Make the screen location pointed to by HL bright.
BRIGHT: DI              ;disable interrupts
        OUT     2       ;switch to bank 3
        DB 0CBh, 0FEh   ;the Z80 command SET 7,(HL)
        OUT     3       ;back to original bank
        EI              ;enable interrupts
        RET             ;Return to calling program

; CHKDIM.ASM by Mike Morearty
; Check if the screen location pointed to by HL is dim or bright.
; If bright, the Zero flag is set; if dim, it is cleared.
CHKDIM: MVI     A,80h   ;set register A to 80h (high bit set)
        DI              ;disable interrupts
        OUT     2       ;Switch to bank 3
        ANA     M       ;AND reg. A with HL's location (check if dim)
        OUT     3       ;back to original bank
        EI              ;enable interrupts
        RET             ;Return to calling program

; TESTDIM.ASM by Mike Morearty
; Switch the intensity of all screen locations
        ORG     100h
        LXI     D,MESG  ;point to 'Press RET...' message
        MVI     C,9     ;code to print string
        CALL    5       ;print it
        MVI     C,1     ;code to get character
        CALL    5       ;get character
        LXI     H,0F000h ;point to beginning of screen
LOOP:   CALL    CHKDIM  ;check brightness of a location
        CZ      BRIGHT  ;make it bright if it's dim
        CNZ     DIM     ;make it dim if it's bright
        INX     H       ;point to next location
        MOV     A,H     ;check if past last location
        ORA     L
        JNZ     LOOP    ;if not, do it again
        RET             ;return to CP/M
MESG:   DB      'Press RETURN to begin: $'
; ^KR CHKDIM.ASM — use WordStar ^KR command
; ^KR BRIGHT.ASM — use WordStar ^KR command
; ^KR DIM.ASM — use WordStar ^KR command
        END
```

The program TESTDIM.ASM reverses the intensity of each location on the screen. It makes use of the three routines above it: DIM.ASM, BRIGHT.ASM and CHKDIM.ASM, which you read into TESTDIM.ASM at the places shown in this listing.

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Wrap-Up

Who We Are

This magazine is hand-assembled and brought to you by a small group of CP/M fanatics working out of a cramped office in Redwood City, on the fringes of Silicon Valley halfway between fogged-in San Francisco and smogged-in San Jose, and across the seven-mile San Mateo bridge from the Osborne Computer Corp. (OCC) Fremont offices (distance is one thing that keeps us at arms length from OCC).

We are known as TUG Inc., and we are in the business of publishing another bi-monthly magazine called *User's Guide*. We are under contract to edit and produce *The Portable Companion* for Osborne Computer Corporation (OCC). We also provide a subscription fulfillment service. We use Osborne and other CP/M computers in our business.

The Portable Companion is still devoted to Osborne computers, but with one difference: no censorship from OCC. That's the deal — we edit and produce it, OCC pays the printing, postage and expenses. You, the reader, should benefit from this arrangement, because you get the best editorial content we can provide about your Osborne computer. We want feedback from you about the content, the advertisements, the design, or whatever you think about Osborne computers or OCC (they read your suggestions, too).

As we said, we are a small group, so please be patient if we haven't yet published or answered your letter to the editor. At *User's Guide* we are deluged with "please keep covering CP/M" letters, and over at *The Portable Companion* (actually the same room) we are deluged with questions for Osborne wizards and other wonderful things.

This issue does not have a Calcaids or a dBASICS column because these columns rely on outside contributions and we did not receive adequate material. The next issue will have these columns and more. We plan to publish, among other things, a feature article on the Co-Power 88 board, a review of MediaMaster, and more information on the Osborne Executive computer.

Keep those articles and letters coming! We appreciate both positive and negative feedback. Write to the editors directly at *The Portable Companion*, PO Box 5384, Redwood City, CA 94063.

Thank you for supporting *The Portable Companion*. We'll do our best to serve you.

Tony Bove & Cheryl Rhodes
October 20, 1984

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